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Thesis

TOWARD AN UNDERSTANDING OF SOME FUNDAMENTAL PROBLEMS OF PSYCHOLOGY.

Submitted by

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FOREWORD

This thesis is an intensive study of a wide field rather than an intensive study of s restricted one. Inasmuch as the writer is expecting to teach psychology next year it was the opinion of his advisers, Dr. Strickland and Dean Wysse, that a thesis of this sort would be acceptable to the faculty and helpful to the writer. The great problem has been that of choosing the contents. An effort has been made to prevent choppiness without too great volume. For this reason the many points in the outline will not appear in the body of the paper which will be divided into chapters only. Where it seems advisable certain divisions will be made. A bibliography is included with each chapter, since each chapter is more or less of a unit by itself. Only the section of each book bearing directly on the subject of the chapter is recorded, hence the same book may appear in the bibliography of more than one chapter.

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CHAPTER I.

INTRODUCTORY.

Psychology has usually been approached from one of two viewpoints: the metaphysical or the scientific, the former being rational in nature and the latter empirical; the former dealt with the nature, destiny, and origin of the soul, the latter with the facts of mental life as they appear in experience.

Historical psychology has been of the metaphysical and rationalstic type. In turn this school of thought may be divided along the lines of differing opinions as regards the nature of ultimate reality. As to the nature of the soul some were spiritualists, others were materialists; as to the relationship between mind and body some were dualists, and others were monists. Readily it can be seen that psychology of this sort must needs have been closely related to philosophy; indeed, until strictly modern times it was dominated by the latter and considered a branch of the same. It is not surprising that as man studied the nature of the mind, its relationship to the body, the relations of himself with his fellows, and analyzed his own diverse reactions, that he should seek a more satisfying answer to his questions than philosophy could afford.

This desire to analyze the mind led to the development of what is called the faculty psychology--a transitional school serving as a link between the old philosophy-dominated psy-

chology and modern psychology. The "mental faculty" idea controlled psychology from about 1680 until 1754. The name of Wolff is inseparably connected with it. By him and his disciples the mind was divided into compartments. Sensation, imagination, will, etc. each had a special faculty. The number of such faculties tended to decrease until only two or three were recognized: for instance passive and active, or intellect, sensibility, and will. This type of thought, even though it was bolstered by such thinkers as the one mentioned, did not prevail for the reason that it was too artificial; furthermore it was speedily learned that mere classification was far from being explanation, and in addition, the confusing of metaphysics with empirical considerations was not welcome. Succeeding thinkers came to feel that the mind must be something more than a mechanical mosaic of static elements or units.

The idea stressed about the middle of the eighteenth century was that of associationalism. David Hume and David Hartely offered association as the essential principle of mental life. It was their doctrine that (1) an idea is independent, permanent, and revivable, and is (2) endowed with the power of association. This doctrine was soon regarded as more metaphysical than empirically scientific, and further reflection made it clear that the whole process was in reverse. An idea is now considered as an event in time; also we know that ideas come into consciousness as a result of the process of association--new ideas that did not formerly exist as far

as the knowledge of the individual is concerned. This principle which seemed to promise so much has been found sadly inadequate as an explanation of all the complex phenomena of mental life. Yet we are grateful to Hume for the attempt to analyze self-consciousness and reduce it to the contents of consciousness. In doing this he of course built upon the contribution of Descartes who might with his, "Cogito ergo sum", be called the discoverer of consciousness.

When we speak of modern psychology we mention a subject that has but a short history of fifty years. It was 1880 before the divorce from philosophy was finally consummated, and we have the true beginning of scientific psychology, its beginning accounted for by the stimulus of other natural sciences that were so rapidly increasing in popularity as a method of solving man's problems. The name of Professor Wundt must ever be associated with the new beginning. In his "Beiträge zur Theorie der Sinneswahrnemungen" of 1862 he showed how the different theories of sense perception and psychophysical relations pointed to a new development of psychology. In the following years he worked with the tools of physiology rather than with those of metaphysics, and his main contribution was his theory of sense perceptions as generated by sensations. Münsterberg and Titchener carried on his work; thus began the method known as Structuralism. It is worthy of remembrance because it marked the beginning of freedom from metaphysics. At this point a quotation from Klemm is of real significance: "Experimental psychology which owes its birth almost entirely to the German scientific spirit

and investigation, soon passed beyond the boundaries of its native country. It has received its most important development outside of Germany in America."(1) Hence the history of modern psychology is largely the story of its progress in America.

The structuralists were speedily followed by the functionalists of whom Angell, James, Judd, and Dewey are outstanding representatives. Functionalism of a more radical type is represented by Pillsbury, while yet another emphasis under the same general head is made by McDougall, who declared in a preface to a recent work, "Mechanical psychology is decidedly preponderant at the present time; and my book therefor is largely a polemic against all psychology of this type and on behalf of purposive psychology."(2)

More recent still is the emphasis upon the self as the unifying factor of experience. This line of thought is represented by Miss Calkins, Royce, and James Ward of England.

Psychoanalysis and Behaviorism are receiving much attention at present; their contribution will be considered in its bearing upon the major problems to be discussed in this paper.

(1) Otto Klemm — A History of Psychology — p 139.

(2) Wm. McDougall — Outline of Psychology — p viii. (Preface)

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This introductory chapter is merely a hasty glance over the background of modern psychology and is written largely from general knowledge. Only three books were used in any specific fashion.

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CHAPTER II.

THE SCIENCE OF PSYCHOLOGY.

The terms 'psychology' and 'psychological' are to-day used very loosely. A person's definition of psychology depends very largely upon his point of view. Woodworth would say that psychology is the science of mental life, life being conceived as consisting in process or action.(1) Miss Calkins would define the term as the "science of the self in relation to environment."(2) Bentley gives us a definition that is short, to the point, and usable; he defines psychology as the science that seeks to describe and understand the experience and activities of the psychosomatic (mind-body) organism.(3) Throughout the discussion this will be the meaning attached to the word psychology.

To define what is meant by the word science is not so easy a task. It's pronouncement affects many persons in the way that "Open Sesame" affects the youthful reader during his first journey through the Arabian Nights. It is a word to conjure with, a god to be worshipped; the adjectival form of the word is the criterion by which all things are judged in some quarters. In a most dogmatic and unscientific manner we are sometimes told just what is and what is not science. The declaration that science deals only with facts is often made to indicate that that settles the matter. Facts are facts, likewise life is life; but such statements tell us nothing.

(1) Robert S. Woodworth   Psychology   p 17.
(2) Mary Whiton Calkins   A First Book in Psy.   p 1.
(3) Madison Bentley   The Field of Psy.   p 11.

If we ask, "What is a fact?" we realize we are face to face with a real problem. There is a disparity between the facts discovered by physical science and those furnished by the direct testimony of consciousness. For instance, the latter would assert that a shaft of white light is simply that, while the former would demonstrate that white light is a combination of all the colors of the rainbow. Early psychologists regarded introspection as the only method of collecting facts for their science, but now much light has been thrown upon the way men think by a study of both the structure and action of the brain. In this connection it is not easy to get what we call the facts for the simple reason that observation of a mental state is not possible while the state is on, all we observe is activity and the state itself is but an inference from the activity. That a person has experience is certainly a fact, but what is experience? Is it a thought process? If so, what sort of thought-process? Simply stated, experience is the referring of an isolated and unrelated fact to that which is well-known, finding a place to put things. This is far from being a full explanation, it ignores the problem of causation, but is it unscientific? The problem we are facing is this: Is the objective alone scientific? Many would answer with an unqualified, "Yes."

The attitude that assumes the world of science to be so well intrenched behind its axiomatic and demonstrable facts is an attitude more antiquated than modern. We are now in the midst of a period when all the principles of orthodox science are under fire. The truth is beginning to dawn upon

us that each science is but a partial view of things and is not justified in assuming too much for itself. Atoms, electrons, genes, poles, equators, seconds, degrees, ether, are not so securely established upon their several thrones. There seems to be just as much reason to posit the existence of faculties, sensations, instincts, neurograms, engrams, and patterns. Dr. Hugo Dingler in his recent Der Zusammenbruch der Wissenschaft makes the following most significant statement, "In modern science, as it is envisaged by its most prominent leaders, there is absolutely no firm resting place left. Every semblance of a foothold which the isolated specialist thought he had, proves to be non-existent, when we look the entire situation squarely in the face."(1) Herbert C. Sanborn in a recent article says, "It is surely a naive misunderstanding of the actual situation which leads scientists now and then to claim that science limits itself strictly to 'facts' and 'findings' undefiled by theory and metaphysics; and to speak of confining oneself to 'facts in their context', of beginning with a 'minimum of metaphysics' etc., is usually to announce ones preference for a given set of assumptions without argument."(2) Modern physiological behaviorism is a good example of this dogmatic attitude. Its system is rooted in abstraction from the experiencing individual, in fact the individual is destroyed in the denial of consciousness, and the latter is denied because it cannot be seen and handled. Hence the system is purely metaphysical in spite of the fact that the term

(1) Quoted by H. C. Sanborn Methodology and Psychology. Phil. Review p 141.

(2) Above article. p 17.

is looked upon with such misgiving.

If the psychologist is to be closed up to the observable and objective he must stand alone; the chemist, the physicist, the astronomer, the anthropologist, and even the mathematician refuse to recognize any such limitation. The 'law of gravity' is an assumption which man has developed to explain falling bodies, nerve currents are the creation of the physiologists; all branches of science use conceptual hypotheses to supplement phenomenal hypotheses. Such concepts are in every case justified if they help one to understand, predict, and control. If leaving the realm of observable fact stamps psychology as unscientific, the choice must be made between that and the ignoring of great realms of experience that as yet have not been submitted to laboratory analysis. In practice if not in theory scientists agree with Joseph Jastrow that, "Every science--and psychology is no exception--must be free to develop its own problems and direct its advance through the lead of that type of analysis that we call theoretical."(1)

Furthermore when a scientist resolves a mental complex into its elements he does not answer all the legitimate questions concerning the nature of the experience. "There is something more in poetry than metrics, something in music that is not vibrations, something in our social and ethical experience that is not a complex of states and consciousness. Never shall we understand this something by merely reanalyzing the mechanism."(2) It is also to be questioned if a person who has never had a certain experience is so well qualified to

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(1) Joseph Jastrow The Reconstruction of Psy. Psy. Review May 1927. p 176

(2) Geo. A. Coe The Psychology of Religion p 13.

interpret it as one who has. Analysis is valuable but doubly so when its limitations are realized.

What then is the relation between psychology and the material sciences? Karl Muenzinger makes the following distinction: A material science finds its basis in abstraction from the personality of the observer; but life as immediately experienced can also form the material of a science without that abstraction; the latter is more adequate.(1) The chemist tells us of the constitution of matter, the biologist acquaints us with the structure and history of living creatures, and the psychologist gives us a workable conception of the mental factors in organic function. Hence the field of psychology includes and goes beyond that of the material sciences. Sensations are both material and mental, the mental phases or facts are non-spatial and private. We must describe them by linking them with events in the physical world. This is not just theory for we do describe inner experiences to one another and understand them.

Again the warning will besounded that we are treading close to the borderland of metaphysics, for the matter just discussed leads up to the questions of meaning and value. Science we are told must ignore value; but does it? Is it interested in mere facts, good, bad, or indifferent? The very essence of mental process is meaning. J. S. Moore declares: "No *fact* is outside the field of scientific investigation, but on the other hand a scientific study of the universe is incomplete unless supplemented by a metaphysical interpretation of

(1) Karl F. Muenzinger Physical and Psychological Reality
Psy. Review May 1927 p 220.

the truths that science has worked out. "(1)

Pillsbury in his discussion of this same question has this to say, "Psychology was the latest of the sciences to separate from philosophy, and the attitude toward many of the fundamental problems is still profoundly influenced by philosophical considerations."(2) There is nothing censurable about this; it is one thing to be dominated by philosophy, it is quite another to refuse to rule it out entirely. It has already been noticed that the modern trend is to see truth as a whole and not as penned off in sections--stockyard fashion. The very trend of physics today is teleological. The folly of quibbling over the dividing line between psychology and philosophy is becoming increasingly apparent. Quoting Muenzinger again, "The history of science since Galileo shows an ever widening field that is jealously, though not always successfully guarded against the intrusion of such 'unscientific' concepts as point of view, quality, purpose and meaning." In a footnote he adds, "Was the popular interest in the Special Theory of Relativity due to the fact that here at least the standpoint of the observer in a restricted sense had to be admitted as a primary factor in viewing this world?"(3) Can any function be discussed out of relation to the end to which it is adjusted? In some fields of investigation at least, the scientific approach to experience must deal with meanings and values. How can one leave meanings to philosophy in the field of social ethics. The purely descriptive function of the scientific

(1) J. S. Moore The Foundations of Psychology p 106.
(2) W. B. Pillsbury The Fundamentals of Psychology p 10.
(3) Karl F. Muenzinger Physical and Psy. Reality p 221.
Psy. Review May 1927.

method which some like to emphasize is largely fallacious. Indeed function becomes value when it emerges from the biological level.

Nothing is gained by any attempt to make of psychology a science independent of biology on the one hand and metaphysics on the other. The structural (physiological) and the functional (consciousness) aspects are both needed. The foundation of psychology is to be found in biology; its superstructure, especially in its causal and purposive elements does approach the realm of metaphysics, and in doing so it is no more unscientific than other lines of research which create and use as tools assumptions that seem to be warranted by the conclusions already reached. Furthermore it does not seem to be scientific to emphasize one method of procedure to the exclusion of all others, nor, on the other hand to condemn any particular one. Kurt Koffka recognizes three valid methods: (1) Natural Scientific--observation of the individual in certain situations, (2) Psycho-physical--observation of the individual in certain situations plus a description of the behavior observed by the experimenter and the subject, (3) Pure Psychological--experiential observation alone.(1) Any treatment of mind is justified if it helps us to understand and control. A true psychology must recognize the fact that each individual lives in his own psychological world; it must be a psychology of self-realization. A developing conception is that of the self as an organizing factor in and growing out of experience; if we are true to all the facts some such unifying factor seems necessary.

(1) Kurt Koffka The Growth of the Mind pp 24-30.

CONCLUSIONS.

Psychology seeks to describe and understand the experiences and activities of the psychosomatic organism.

"What is a fact?" is not a simple question. Some solid facts are tottering; some shadowy facts are assuming real proportions.

No science is purely objective. All branches go forward and make real progress by way of assumptions.

Analysis does not answer all the questions; it leaves the greatest question beyond our reach when it destroys the whole.

Psychology includes and goes beyond the physical sciences. It roots in biology, it towers toward metaphysics.

Meaning and value are important phases of psychological research.

True science takes into account the facts and also the gaps between the facts; this procedure is by no means peculiar to psychology.

The final criterion of the science of psychology is to be found in the turning of its data into a discipline that will be applicable to the interests and progress of the race.

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CHAPTER III.

INSTINCT.

The battle over instincts is raging and is just now at its height. Psychologists hesitate to say anything very definite, hence the literature on the subject abounds in glittering generalities. Only a minority come out with a clear-cut statement of their beliefs. The instincts are regarded as the springs of action, the driving motives of conduct, as minor considerations, or as non-existent figments of the imagination. The very fact that some can regard them as all-important while others dismiss them as without any foundation in fact reveals the chaotic and hodge-podge uncertainty that shrouds the subject. The best we can do in this brief review is to sift out a few facts that seem fairly tenable and make what suggestions we can upon the basis of scientifically accepted evidence. The method will be as follows: First a summary of four theories, each representing a class or school of thinkers; secondly a discussion of the major problems that come under the subject, with the criticisms and contributions of other writers; and thirdly, a summation of facts that seem to point the way to an understanding of the baffling problem, if not to an eventual solution.

The most quoted man on the subject of instincts is William McDougall. His theory in abbreviated form follows: He accepts the fact of instincts without question and says: "These all-important and relatively unchanging tendencies, which form the basis of human character and will, are of two

main classes:-

1. The specific tendencies or instincts;

2. The general or non-specific tendencies arising out of the constitution of the mind and the nature of mental process in general, when mind and mental process contain a certain degree of complexity in the course of evolution. Instinctive actions are displayed in their purest form by animals not very high in the scale of intelligence. As an example he cites the mason-wasp which paralyzes caterpillars and walls them up with her eggs in order that the larvae might have food, although she pays no more attention to the nest and cannot have any understanding of what she is doing. Yet McDougall would also assert that instincts is something more than mere innate tendency--it is also the outcome of a mental process initiated by sense-impression exciting a complex of sensations having meaning for the animal. He defines an instinct as an inherited or innate psycho-physical disposition which determines its possessor to perceive, and to pay attention to, objects of a certain class, to experience an emotional excitement of a particular quality upon perceiving such an object, and to act in regard to it in a particular manner, or, at least, to experience an impulse to such action.(1) Concerning this doctrine of impulse which he calls the hormic theory he says in another book: "The main thesis of this book is that in every case the motive, when truly assigned, will be found to be some instinctive impulse or some conjunction of two or more such impulses. Take away these instinctive dispositions, with their powerful

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(1) Wm. McDougall Social Psychology Sec.I, Chapter II.

impulses and the organism would become incapable of activity of any kind; it would lie inert and motionless, like a wonderful clockwork whose mainspring had been removed, or a steam engine whose fire had been drawn. The impulses are the mental forces that maintain and shape all the life of individuals and societies, and in them we are confronted with the central mystery of mind and life and will."(1)

McDougall names seven specific tendencies or instincts, each with its accompanying feeling or emotion:

1. Flight	Fear
2. Repulsion	Disgust
3. Curiosity	Wonder
4. Pugnacity	Anger
5. Self-abasement	Subjection
6. Self-assertion	Elation
7. Parental	Tenderness

Under non-specific tendencies he lists sympathy, suggested, imitation, and play.(2)

The hormic theory, the attempt to balance the instincts and the emotions, and the attributing of consciousness to instinct are the outstanding points of the theory.

An opposing theory is to be found in the radical behaviorism of John Watson. Man is an animal with certain types of structure. Having that kind of structure he is forced to respond to stimuli at birth in certain ways--breathing, sneezing, etc. This is man's unlearned behavior and in it there is no evidence of what has been called instinct. We no longer need that term; all so-called instincts are learned behavior. There is no such thing as inheritance of capacities, talents, or characteristics: these are all the result of training.

(1) Wm. McDougall Outline of Psychology p 218.
(2) " " Social Psychology Sec. I Chaps. III-IV.

Man is a whole animal; he reacts with each and every part of his body; different names have been given to activities resulting from one set of neurones reacting more violently than others.

Do all men start with the same group of responses? Only a genetic psychologist is qualified to answer: "yes, within the limits of individual variation." Black, white, and yellow babies may look different but racial differences in behavior are no greater than individual differences. Physical variations may be laid down in the germ plasm and appear in the offspring. Structure does not determine function but vice versa. The blacksmith and the bookkeeper are structurally shaped by the lives they lead. An economist had three sons: the father took the first one under his wing and he too became an economist; the second son became 'mother's boy' and developed into a lounge lizard; the third son was left to shift for himself and became a pervert. Difference in structure in early training will account for all differences in later behavior; there is no real evidence of the inheritance of traits. A healthy well-formed baby of crooks, murderers, or prostitutes has just as good a chance as another if brought up in the proper environment. Many born 'moral' go wrong. Dr. Watson offers to take a dozen children and make of each at random rich man, poor man, beggar-man, thief, doctor, lawyer, merchant, or ~~t~~chief. He deplores the 'what-can-you-expect' attitude. Those who are born with structural defects suffer most from the inferiority complex imposed upon them by others.

Has the boomerang an instinct to return to the hand of the thrower? The law of physics accounts for its behavior.

Why cannot the psychologists learn here a little lesson in simplicity? Man's action is likewise a corollary of the way in which he is put together.

Since we cannot tell learned from unlearned behavior by watching an adult we are taken to the laboratory to watch several hundred infants from birth to thirty days of age; from them we learn the following facts regarding unlearned responses: Sneezing, hiccoughing, and crying soon become conditioned. Erection, voiding of urine, defaecation, early eye movements, smiling, feeding responses, crawling, grasping, and blinking all have observable causes. Handedness is a matter of social usage; it is not an instinct nor is it structurally determined.

The infant is a graduate student in the subject of learned responses before 'instincts' such as imitation, rivalry, cleanliness, etc. appear. Every act has a genetic history, hence the 'instinct' concept is academic and meaningless. The 'stream of activity' should be substituted for James' 'Stream of consciousness'. All men start out equal. What happens after birth makes one a hewer of wood and a drawer of water. All are the creatures of habit systems, and personality is but the end-product of these systems.(1)

Floyd H. Allport represents a modified form of the behavioristic emphasis. He too refuses to use the term instinct and insists that the subject must be studied from the small rather than from the large end--that is, from the threshold of life. He regards post-natal development as a general growth process facilitating the formation of habits, rather

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John Watson   Psychologies of 1925   Chapter I.

than a process of maturation of instincts. Like Watson he sees the behavior of the new-born infant as a random, poorly coordinated, unadapted affair. While he decries the use of the term instinct he recognizes prepotent reflexes and lists six of them:

1. Starting and withdrawing.
2. Rejecting.
3. Struggling.
4. Hunger reactions.
5. Sensitive zone reactions.
6. Sex reactions.

He also advances the doctrine of chained reflexes, and gives as an example the complete sexual reaction with the following three links composing the chain: (1) Internal stimulus, (2) Discharge, (3) Quiescence. He recognizes also a law of conditional response and illustrates it as follows: If a woman loves her husband and her home her lover-like responses will be extended to a new stimulus, the child, which through its origin as well as through its immediate presence is closely connected with the beloved objects.

Modification proceeds upon the afferent side of the reflex arc by the process of conditioning just mentioned; on the efferent side it proceeds by learning to solve more and more complex problems. This progress results in the development of prepotent habits at a very early stage in the life of the organism. Allport makes his distinction between instincts and prepotent reflexes in order to preserve the influence of environment.(1)

(1) Floyd H. Allport Social Psychology Chapter III.

The fourth view of instinct to be presented is that of the New Psychology(Psycho-analytic school); A. C. Tansley is chosen as the spokesman. There are three dominant instincts: (1) Self-instinct which has for its motive the care of the individual, (2) Sex-instinct which has for its motive the perpetuation of the race, and (3) Herd-instinct which has for its motive man's desire for association with his kind. These three instincts are the roots from which a great multiplicity of complexes grow, which, psychologically, bear by far the greater part of the affect of the mind, contain the psychical causes of all the major conflicts, and determine the greater part of human conduct. Tansley regards a complex as a well defined system of ideas and emotions, created in the mind by the play of experience upon the primary forces of the mind--which are the instincts. He defines the instincts as certain innate specific tendencies of the mind that are common to all members of any one species. Each instinct has three factors: (1) It is excited by an object, (2) It includes mental activities regarding the object, and (3) It results in action regarding the object. Hence the cognitive, affective and conative attitudes are all included. Reflex action is a simpler kind of reaction, but may be just as purposeful as instinct. In man instinct is transcended but the ends of human activity may probably all be traced to extensions, combinations, modifications, or perversions of the primitive instincts. Instinctive action is often limited by conflict between the instincts, for instance between the herd and the egoistic. Energy can also be transferred from one instinct to another. Tansley's view is

The fourth view of instinct to be presented is that of the new psychology (psycho-analytic school); A. G. Tansley is chosen as the spokesman. There are three dominant instincts: (1) Self-instinct which has for its motive the care of the individual, (2) Sex-instinct which has for its motive the perpetuation of the race, and (3) herd-instinct which has for its motive man's desire for association with his kind. These three instincts are the roots from which a great multiplicity of complexes grow, which, psychologically, bear by far the greater part of the effect of the mind, contain the causes of all the major conflicts, and determine the greater part of human conduct. Tansley regards a complex as a well defined system of ideas and emotions, created in the mind by the play of experience upon the primary forces of the mind--which are the instincts. He defines the instincts as certain innate specific tendencies of the mind that are common to all members of any one species. Each instinct has three factors: (1) it is excited by an object, (2) it includes mental activities regarding the object, and (3) it results in action regarding the object. Hence the cognitive, affective and conative attitudes are all included. Reflex action is a simpler kind of reaction, but may be just as purposeful as instinct. In man instinct is transcended but the mode of human activity may probably all be traced to extensions, combinations, modifications, or perversions of the primitive instincts. Instinctive action is often limited by conflict between the instincts, for instance between the herd and the sex instincts. Energy can also be transferred from one instinct to another. Tansley's view is

a combination of McDougall's biological view of mind and certain concepts from Freud and Jung.(1)

Wundt, one of the pioneers in the field of modern psychology defined instinct as a form of lapsed intelligence. "Movements which originally followed upon simple or compound voluntary acts, but which have become wholly or partly mechanized in the course of the individual life or of generic evolution, we term instinctive actions."(2) Gordon calls instincts emotional dispositions and says further that man's personality and behavior depend upon these instincts which are strictly comparable to those of the animals.(3) According to Shand an instinct is "an inherited disposition both to be excited by certain stimuli and to respond with a specific kind of behavior or expression to such stimuli."(4) Edman regards an instinct as a native endowment, "an unlearned mechanism for making a response and an unlearned tendency to make it,"which means a combination of native capacity and native desire. He further says that "instinctive tendencies are the primary motives and the indispensable instruments of action, whether it be mudpies or metaphysical systems."(5) Another writer says that instincts "represent elementary, irreducible, innate, persistent, tendencies."(6) William James defined the term to mean "the faculty of acting in such a way as to produce certain ends, without foresight of the ends, and without previous education in the performance."(7)

(1) A. C. Tansley The New Psychology Part VI pp 199-297.
(2) Quoted by Bernard Instinct pp 72-73.
(3) R. G. Gordon Personality p 39.
(4) Alex. Shand The Foundations of Character p 182.
(5) Irwin Edman Human Traits pp 18-19.
(6) M. K. Thomson Springs of Human Action p 71.
(7) William James Principles of Psychology II p 383.

One who has made a careful study of the whole problem has given us a definition that shows his painstaking thought on the matter. "An instinct is an inborn(in the sense of inherited)activity process which has remained intact, that is, which has not been remade through the process of learning or of making new adjustments by means of the substitution of new stimuli or responses for the old which were inherited."(1)

The four theories outlined and the definitions just given serve to show how loosely the term instinct has been used; it has been regarded as a blanket with which to cover many things which seem inexplicable. Hence it is little wonder that the very word has fallen into disrepute; a person's use of the term reveals nothing of his understanding of the subject; to one it may mean the simplest kind of reaction while to another it may mean conscious direction. However, the very fact that the term has been held onto so tenaciously signifies that there must be something behind it. So we are ready to ask ourselves the double question: "are there such things as instincts, and if so, what are they?"

As regards the source of instincts we can say nothing, except perhaps that here is the root of all the disagreement. The real source would be the germ for undoubtedly the prenatal environment has its effect upon the instinctive equipment of the organism if such exists. Upon this insecure foundation any theory of the instincts must be built.

Reflexes and instincts have much in common and yet it is

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(1) L. L. Bernard Instinct p 84.

possible to make a distinction between the two, although the line is very difficult to draw. A reflex is the simplest form of reaction to stimuli; it has to do with some special organ or locality, while instinct involves the whole organism. The action of the man dozing on the porch in the sunshine and brushing the tickling fly from his nose is purely reflex. An instinctive action is usually regarded as more complicated.

Let us refer again to Watson's argument for the abolition of instincts. The more it is studied the more self-refuting it becomes. There is no doubt that he has made a real contribution to psychology in compelling writers to think about what they have taken for granted, but he assumes too much. Because he found no instincts in his infants he assumed that there are no instincts at all. The boomerang, he says, returned to the thrower but had no instinct to do so. Yet it returned because of its original nature, a broomstick would not have come back. Man acts, at least in part because of the peculiar equipment of his original nature. While Watson denies the inheritance of capacities and tendencies he admits inherited variations due to structure and inherent in the germ plasm. Logically it would follow that certain forms of activity would spring from this heritable background. He speaks of unlearned responses. What are they but actions that cannot be explained without going back to original nature? He further admits difficulty in determining how much of certain acts is due to training or conditioning--in other words there seems to be an element present that cannot be ruled out when capacity, instinct, and tendency have been dispensed

with. He admonishes us to try hard to think of each unlearned act as becoming conditioned shortly after birth. Why and what of it? It would still remain an original unlearned act, which is very nearly a substitute term for the despised instinct. Nor can the subject of the maturation of instincts be ignored and thus disposed of. Instincts may not be apparent at birth--they may remain latent and appear at a future stage in the development of the organism.(1)

Allport's attempt to get rid of the instincts, while less radical, meets with the same objections. Instead of unlearned behavior he makes use of prepotent reflexes as a means of eliminating instincts.(2) "Thus it turns out that the anti-instinctivistic social psychology finds that it cannot explain the fact of the development of the individual organism without summoning instinct to its aid."(3) Somewhere in every theory instinct is found sooner or later, welcome or not. If it is impossible to get rid of such a troublesome element even when one tries so hard to do so there must be more to it than a mere metaphysical assumption or postulation.

The lower in the scale of life we go the more likely we are to find purely instinctive actions. Koffka gives us three examples. (1) The incubator chick hatched by itself immediately pecks at any small object in its neighborhood. (2) Birds reared in an artificial nest without parent birds commence building their own nests when brooding time comes; and the nests they build are typical for that species of bird in spite of the fact that they have never been in one or seen one. (3) A squirrel

(1) See pages 24-5.
(2) See page 26.
(3) G. H. Wyatt The Recent Anti-instinctivistic Attitude in Social Psychology Psy. Rev. Mar. 1927 p 131.

taken from its nest immediately after birth was reared under artificial conditions. When given his first nut he gnawed around it in squirrel fashion and devoured the kernel. If given more than he could eat he cached them in some hiding place for future use, as squirrels do in their natural habitat. This squirrel had never been on the ground. Concerning these examples Koffka says they "demonstrate that a living being can behave in a manner peculiarly suited to its own existence, or even necessary to the perpetuation of the species, without any relevant experience whatsoever."(1) Leonard Carmichael in a recent series of experiments with embryo salamanders which had been anaesthetized during their early development arrived at the conclusion that the organisms developed by certain processes of a stimulus-response nature within the organism itself and not by learning, although external conditions had some effect.(2)

Max Schoen has recently given a very satisfactory answer to the question under consideration, namely, are there any instincts? "The answer is 'yes' and 'no', depending on the definition of instinct, and where it is applied. If by instinct is meant simply native behavior, the answer is 'yes'. If it implies specific forms of native responses the answer is again 'yes', provided we agree to include human reflexes under instincts, and provided that we also recognize other forms of native behavior in the human organism. If, however, the reflexes are to be excluded, and instinct is to be used as signifying

(1) Kurt Koffka Growth of the Mind pp 87-89.
(2) Development of Behavior in Vertebrates Experimentally Removed from the Influence of External Stimulation. Psy. Review Jan. 1927 pp 34-47.

native specific behavior, and applied indiscriminately from insect to man, then the answer to the question must be an unqualified 'no'". (1) Dr. Strickland is substantially in agreement with this view when he says that while man may not inherit special instincts he does inherit with his organism certain capacities for action and feeling. (2)

M. K. Thomson has given us a summary which is tenable enough to be included here in abbreviated form. There is no pure instinct in actual life; all are prejudiced by habits from the start, and are constantly altered by social pressure; they may be and are sublimated. However obscured they may be by habit and social pressure they determine to some extent the set or purpose--the sort of things the individual will be interested in; they direct the subconscious in many ways; they acquire new associations but are not thereby destroyed; they control a large part of the individuals stock of general energy and carry the fuse; they are adaptable in their means of realization, hence their real strength is seldom fully realized. (3)

Some classifications of instincts have already been given. Many others could be mentioned but it seems not worth while. Thorndike recognizes four methods of classification:

1. By the functions which the tendencies perform.
2. By the responses which are their end-terms.
3. By the situations which are their first terms.
4. By their origin or affinties in development.

Bernard would add a fifth based on inner structure and organization. He has done an amazing piece of work in collecting

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(1) Instinct and Man Psy. Rev. Mar. 1927 pp 122.
(2) F. L. Strickland Psychology of Religious Experience pp 78-9.
(3) M. K. Thomson Springs of Human Action p 81.

and classifying the classifications. The lists of instincts which he had gathered covered 300 typewritten pages and the end not yet in sight. His tabulated results follow:

General Groups of Instincts	849	
Specific Instincts	1594	
Indefinite and Peculiar Insts.	843	
Instinctive totals	2474	Patterns, attitudes.
TOTAL	5759	

(1)

Evidently specific instincts can be multiplied forever. Those who still classify use the group method. Pillsbury names three classes very similar to Tansley's: (2)

1. The self-preservative.
2. The race and family preservative.
3. Welfare of tribe or social unit. (3)

Thorndike recognizes six classes:

1. Self-preservative.
2. Parental.
3. Social.
4. Adaptive.
5. Regulative.
6. Resultant or miscellaneous.

All classifications are matters of opinion. More and more it is being felt that instinct as such is more of a principle than a set of specific reactions, each discernible from the other. Bernard is probably right in his opinion that we can no longer class activity complexes as instincts. He says further that actual instincts are much simpler and more elemental than those classified as such. Including the reflexes there may be hundreds or thousands of these fundamental instinctive reactions. (4)

Whatever these original tendencies are they are modifiable through interaction, learning, or environment. Allport declares

(1) L. L. Bernard — Instinct — p 220.
(2) W. B. Pillsbury — Fundamentals of Psychology — pp 224-5.
(3) E. L. Thorndike — Original Nature of Man — pp 205-6.
(4) L. L. Bernard — Instinct — p 522.

that half the process of education consists of transferring appropriate responses to new and more finely discriminated stimuli.(1) Another says "Inhibition of one instinct may further another, e. g. in shunning society for the sake of accomplishing a cultural piece of work, we are swayed by the will to power in downing our gregarious instincts."(2) Max Schoen finds a close relationship between native behavior and intelligence:"Hence native behavior and intelligence are coextensive, since intelligent behavior means modified native behavior, and consequently the degree of modifiability of the native behavior means the degree of intelligence."(3) For progress there is then the need for the adjustment of instinctive desires to one another. The Freudians are perfectly reasonable in their contention that such instinctive desires should be expressed <u>or</u> controlled, but never suppressed.

Can we now arrive at any conclusion as to whether or not instincts are vitalistic or mechanical? Does McDougall with his philosophical impulse psychology furnish a resting place or must we abide with Watson and reduce man and his nature to a simple machine process? Are instincts differentiations of some elan vital or are they reducible to the laws of physics? The either-or attitude is impossible, both positions are untenable, at least if either is held to the exclusion of the other. At present we can best remain upon some such mediate ground as the following: The heritable foundation

(1) Floyd Allport	Social Psychology	p 40.
(2) A. A. Roback	Problems of Personality	p120.
(3) Instincts and Man	Psychological Review Mar. 1927.	p123.

of instinctive action is a fact that none as yet have able to disprove: indeed their efforts to do so have established it the more firmly. The heritage is one of capacity rather than of forms of activity. (Although these may seem heritable on the lower levels of life, for instance: Koffka's chick, birds, and squirrel. Such things have not been observed among humans.) Much of what has been called instinct has been a product of training and evolution, "conditioning" to use Watson's phrase. How a man does as he does may be explained by mechanics, but why he does as he does is a question mechanics cannot answer without calling in the aid of unlearned responses or prepotent reflexes.

Instincts never reveal themselves in isolation, but are always mixed with the relfexes on the one side , and with habit and even reason on the other. The quotation from Schoen on page 35 would indicate that much of the misunderstanding has been a matter of terminology. The great complexity of behavior has not been taken into consideration. One is on safer ground in using the term instinct rather than instincts especially as applied to human beings; we err in placing all life from insect to man upon the same plane and insisting upon the same terminology throughout. So much of our contention is based upon viewpoint. As Henry Rutgers Marshall puts it: "If what we call instinct-actions could be sufficiently slowed down they would show all the characteristics of adaptive activities; and if what we call adaptive activities could be sufficiently speeded up they would appear as instinct-actions."(1)

(1) Mind and Conduct p 36.

Many of the instincts of the past have been shown to be a combination of many factors rather than a product of endowment. For instance the parental instinct has two phases: sustenance and protection; furthermore it has nutritive, defensive, offensive, and sportive aspects, hence it is a complicated thing. Perhaps McDougall was trying to account for this complexity of behavior when he identified emotion with the affective side of instinct. This is open to three objections: (1) An instinct may be excited without exciting an emotion, (Since McDougall defines instinct as always having an affective phase, this objection might be regarded by some as invalid.) (2) An emotional system may have several instincts, and (3) Emotion often comes only after the instinctive action is in the past. According to Shand, "Every primary emotion tends to organize in its system all instincts that are serviceable to its innately-determined end, and to acquire many serviceable tendencies which modify such instincts."(1)

Bernard gives us four facts dealing with the hereditary nature of instinct. If borne~~s~~ in mind they will help save one from certain confusions:

1. Hereditary equipment of the new-formed individual is completed at the point of fertilisation.
2. Only the structural organization of the somatic cell is so determined.
3. Somatic structures do not influence the inheritance determiners.
4. Reproductive cells do not transmit the same traits as those contained in the aggregate somatic structure. (This consideration would deny the possibility of acquired characters.)

(1) The Foundations of Character p 192.

Hence a person does not inherit an abstract power so much as concrete organs.(1) But Bernard does not emphasize the fact that these concrete organs may contain some such power.(?) Pure instinct would then contain no conscious or purposive element but would be merely functional, and this conclusion is acceptable. Watson is correct in his position that our present use of the term includes too much that is sophisticated and learned. Nature and nurture run together at a very early stage in the life of the organism. Thorndike says that "original nature is not a set of independent mechanisms but a hierarchy of mechanisms which may cooperate in response to any one situation. Acquired nature is generated from original nature and recombines with it to form new hybrids. Nine-tenths of what commonly passes for distinctively human nature is not in man originally, but is put there by institutions or grows there by the interaction of the world of natural forces and the capacity to learn."(2)

Behavior is a complex of habit and all it includes, and is interwoven with thought and is a constantly changing experience. As learning and thinking develop, instinct becomes less and less important. "Personality is not an incrusted entity, but a mutable process, as it were, changing and growing, it wings free of all such restraints as an instinct philosophy would imply. It is not driven fatefully by definitive vital forces, nor is it harnessed or preformed neural patterns."(3)

(1) L. L. Bernard Instinct pp 259-265.
(2) Original Nature of Man pp 196-199.
(3) P. F. Valentine Psychology of Personality p 113.

SUMMARY.

1. Any discussion of instinct is futile without a primary clarification of terms.
2. The looseness with which the term has been used has resulted in its being largely discredited.
3. Reflexes and instincts have much in common; so much that no definite line of demarcation can be drawn.
4. Watson's argument for the abolition of instincts altogether is self-refuting.
5. Unlearned responses and prepotent reflexes must be used in place of the discredited instinct and this is begging the question.
6. Pure instinctive reactions in man are not observable. Lower in the scale of life some such do appear.
7. Classifications are rendered futile by their bewildering multiplicity and complexity.
8. Orginal tendencies or capacities are not static but modifiable.
9. Both the vitalistic and the mechanistic doctrines taken alone are untenable.
10. Laws of biology may answer the <u>how</u>; the <u>why</u> is elusive; only by speculation can an answer be given at present.
11. The complexity of human behavior must not be forgotten, else confusion will inevitably result.
12. Most of our common instincts are combinations of a number of different factors.

13. Acquired nature and original nature are inseparably linked together in human experience. Personality is not a static entity but a process.

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CHAPTER IV.

THE EMOTIONS.

There is so much uncertainty as to what is an adequate theory of the emotions that I shall in this chapter follow a rather uncommon method of discussion. First of all a summary of the views of a number of modern psychologists shall be given; not all the views by any means but the principal ones which have scholarly recognition. This presentation shall be followed by a gleaning process in which the summaries shall be examined and those things taken from them which seem to have good foundation. In this connection other authors shall be quoted as they furnish interesting sidelights on the phases of the question under discussion.

The following views are given in no particular order but each is set off by itself under the name of a psychologist who represents the particular school of thought.

FLOYD HENRY ALLPORT.

Emotion is aroused by a stimulus. It is a diffuse pattern of response invading both the somatic (outer) and the visceral (inner) regions of the body. These changes stimulate certain receptors and the following results ensue:

1. Kineasthetic sensations from the movements of arms, legs, etc.
2. Kineasthetic sensations from the visceral responses.
3. Organic sensations from the visceral responses.
4. Cutaneous sensations from the effects of sympathetic control in the blood vessels and other structures of the skin.

The emotion is connected with the response and not the perception. (James-Lange theory) The J-L theory is good as far as it goes but it fails to distinguish the pattern of response capable of arousing the consciously distinct emotions of common experience. Every emotion has an affective element and also some distinctive quality whereby it may be recognized apart from its affective aspect.

All emotion is classed as pleasant or unpleasant. In the autonomic nervous system and the viscera we find the physiological mechanism which is needed to explain the above. The physiological antagonism between the cranio-sacral and the sympathetic portions of the autonomic system is the correlate of this antithesis of affective quality. These two divisions innervate the same organs, and produce in them exactly opposite types of reaction. The sympathetic portions function during unpleasant and the cranio-sacral during pleasant emotions.

A primitive man is eating out in the woods. The cranial division is at work producing salivary and glandular secretions necessary for eating and digesting. He sees an enemy. The cranial division ceases to operate. His mouth gets dry. The secretions stop flowing. He is in the throes of fear, an unpleasant emotion.

The chief pleasures of mankind, on the other hand, center about the cranio-sacral functions of nutrition and sex. An exception must be made to the statement that cranio-sacral impulses underlie emotional states generally: games, elation, mirth, etc. possess no discoverable relation to the cranio-sacral functions. They are apparently due to afferent

impulses from reactions carried out by unimpeded cerebrospinal impulses. In other words they are somatic rather than visceral in origin.

Unpleasantness is more definite and imperative and is slower of arousal than pleasantness because the synapses of the sympathetic ganglia have a higher resistance than those of the cranio-sacral division. The anger cry in a baby takes a half minute, while the tickled laugh is immediate. The two (pleasantness and unpleasantness) are also antagonistic. Each may inhibit the other. Fear may, as we have seen in the illustration of the man eating in the field, inhibit pleasant emotion.

Somewhere there must be a differentiating factor which determines which emotion shall be aroused by a stimulus. This is found by Allport in the attitude of the individual--whether he attacks or flees. (J-L theory again) Pain and grief may pass quickly into anger through a change in the nature of the somatic responses. The affective component is then the most primitive ingredient of human emotion.

Unpleasant emotions are aroused when:

1. The stimulus is too intense.
2. It is repeated too often.
3. It is too sudden.
4. The usual somatic response to powerful drives is blocked.
5. The state of visceral tonus is not such as to make the individual receptive to the idea. Don't ask Dad for the extra allowance until *after* he has had a good dinner.

In social behavior it is not uncommon to have both pleasant and unpleasant elements in complex emotional states. Certain regions may be under the control of the cranio-sacral while others are at the same time invaded by the sympathetic. The danger of civilization is that all somatic response be inhibited, thus causing visceral energizing effects to be discharged only inwardly, and producing an extended, intensified, and lasting state of unpleasant internal feeling. (1)

WILLIAM McDOUGALL.

Emotional qualities are not essentially different from sensory qualities. Conation (striving) is a mode of experience that is often disregarded because of its subtlety and elusiveness. William James made it a special kind of sensory experience. But mental effort cannot be identified with bodily effort. A person may strongly resolve to produce a weak muscular action and vice versa. Conative experience is the felt impulse to action and is present in all emotional experience.

The expressions of the emotions are adaptations of the body to the modes of instinctive activity proper to the species. (Darwinian) The sum of the adjustments of the nervous system constitutes the emotion. A descending order of bodily adjustment is accompanied by a diminishing scale of qualities of emotional excitement; that is, there is a close correspondence between bodily adjustments and the distinctness of emotional excitement. For instance: The instinct to escape is coupled with the emotion of fear, while the longing for companionship is

(1) Floyd Henry Allport Social Psychology Chapter IV.

is accompanied by the emotion called loneliness. A less distinct adjustment is accompanied by a less distinct emotion.

The James-Lange theory implies a more intimate dependence of mental process upon bodily changes than is actually the case. It ignores the conative aspect, that an impulsive striving toward a goal is the essence of every emotional reaction. Being angry involves a tendency to strike, and not the reverse.

Two instinctive impulses may be excited simultaneously, for instance, fear and curiosity. If the two cannot cooperate, the stronger will inhibit the weaker.

Emotions are of two classes: simple and derived. The following considerations mark the distinctions between them:

1. One conditioned by impulse (the latter), the other the result of thinking.
2. The primary springs from instinctive disposition; the derived arises in the course of operation.
3. The one is a force, the other an incident.
4. The one arises from a disposition organized within the sentiments, the other arises from no enduring disposition.

The primary emotions are from the visceral sense, the derived emotions ensue from the operation. (1)

In another work McDougall brings out the point that there is no brain center for feeling, also that the facts cannot be reconciled with any form of parallelism. He makes consciousness of the meaning of the whole a vital part of the process. The objects of higher orders which yield aesthetic satisfactions are constructed by our mental activity--a synthesis of parts

(1) Wm. McDougall Outline of Psychology Chapters XI-XII.

to a unitary whole which, with the feeling tone are purely psychical facts that have no immediate correlates among the brain processes. Pleasureable and disagreeable feelings determine in part the course of trains of association: similar tends to follow similar. This has a powerful influence upon the organic.

A cat is locked in a cage outside of which lies some tempting food. In struggling to get out the animal rubs against a hidden latch and the door flies open. On successive trials this latch is found more quickly until the cat can go right to it. Why did the particular movement become associated with the particular sense-impression? The answer is that the pleasure-feeling of success is the link. (This leaves one in the air however; why does one phase of activity express itself as pleasure and another phase as displeasure? When we have enumerated and assembled all the facts something still seems to be missing--the psychic side which they possess.) (1)

JOHN WATSON.

Emotions as we usually understand them are not inherited. Study of emotional behavior must be carried on from the genetic standpoint. The classified illustrations of hereditary response to furry animals is an old wives' tale. Such fear responses are always conditioned. There are three observable forms of response that can be called out at birth by three sets of stimuli: fear, rage, and love. These form the nucleus out of which all future emotional reactions arise. They so

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(1) Wm. McDougall Body and Mind Chapter XXII.

quickly become conditioned that they can hardly be called hereditary modes of response. For instance the fear-response can be called forth by a loud noise or by removal of support. A child showed no fear of a large white rat until a loud bell was sounded close to him each time he reached forth to touch the rat; the resultant fear of the animal was so great that the child endeavored to get away from it. Watson regards this experiment as a far more prolific goose for laying golden eggs than James' barren formula. (The theory that emotional response is determined by reaction to stimuli: man fears because he runs, etc. rather than vice versa.) Emotional response is conditioned or unconditioned. In the latter all similar objects call out the response, while in the former it is called forth only by the original objects.

Emotional reactions, then, are built in an order like most of our other reaction patterns. Visceral and glandular factors predominate. We have never schooled ourselves in these internal responses, hence many things happen to us which we cannot talk about. Our emotional life must grow and develop like our other sets of habits.(1)

(As in Watson's theory of instinct as non-existent he tried in vain to explain all without recourse to heredity so here he must also find an ultimate basis for emotion in the three forms of hereditary response. While all responses in later life may be "conditioned" there must be an original something upon which the "conditioning" process can operate.)

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(1) John Watson Psychologies of 1925. Chapters II-III.

LEONARD T. TROLAND.

Sensation is due to a nreve activity which takes place in the cerebral cortex. The unpleasantness must be due to some property of the activity in the cortex--the discouragement of the cortical synapses, meaning the increasing of the resistance of these synapses. Pleasantness is due to the process of encouragement which is taking place in the cortex, a decreasing of the resistance of the cortical synapses which are controlling response at the given moment. Feeling in consciousness is paralleled by changes in the resistance of the cortex, but it is only while the resistance is being lowered that pleasantness exists, and the consequent reduced resistance is not a condition of this feeling. Feeling is thus related to a purely dynamic aspect of the brain mechanism. The role of feeling in consciousness is therefore to represent the rate at which different forms of response are being built up or torn down at any moment. If the process is constructive the feeling is pleasant and vice versa.

The formation of a complex is based upon association of ideas. Two factors are presented to consciousness simultaneously, and thereafter each can bring to mind the other. Every moment of action of the entire system of sensory nerve channels impresses itself upon the cerebral cortex in a unified way. The cortex operates and records it as a unit. If a portion of it is at some future time reproduced it tends to arouse the original unitary consciousness. If a dog always associates food with the ringing of a certain bell he has the bell-food complex.

Thus are our cortical encourage~~e~~rs and discouragers controlled by some form of sensory stimulation. There are as many complexes as there are encouragers and discouragers. Freud in limiting complexes to the sexual goes too far. There is nothing necessarily pathological about a complex. A complex is a habit-former and as such is the key to an understanding of emotional experience.(1)

EDWARD L. THORNDIKE.

There is almost nothing known of the neurone action concerned in producing any emotion. Original nature shows a a multitude of special responses which act as potent situations to evoke attention and various adaptive responses from others of the species.(2)

ALEXANDER F. SHAND.

James and Lange did not envisage the problem of the play of the emotions in human life and the fact that the emotions become organized about those things in life we count good. They did not consider the bearing of their physiological theory on the conception of the emotions as forces consciously or unconsciously pursuing ends. When we define them to include feeling and perceptions and to exclude their conative aspect we are no longer troubled with questions of their tendencies. Emotion connotes not feeling abstracted from impulse but feeling with its impulse, and feeling which has essentially a cognitive

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(1) Leonard T. Troland The Mystery of Mind Chapters IX-X.
(2) Edward L. Thorndike Original Nature of Man Chapter XI.

attitude, however vague, and frequently definite thoughts about its object. Emotions are forces within us to perform certain functions; but are imperfect instruments. The emotional system is as follows:

1. The emotion itself.
2. Processes connected with it in the organism.
3. Its outward expression and modes of behavior.

McDougall identifies emotion with the affective aspect of the operation of an instinct. By so doing he obscures the following facts:

1. Instinct may be evoked without exciting an emotion.
2. An emotional system may have more than one instinct.
3. The same instinct may be found in different emotions. (1) (2)

MARY WHITON CALKINS.

Emotion is first and foremost an intensely individualizing experience; both the subject and the object of emotion are realized as unique and irreplaceable, they are both individualized. Emotion then, is a personal attitude, a receptive or passive experience--an awareness of being influenced or affected.

Emotions are grouped according to relations between selves and on the pleasant-unpleasant basis. Though they are primarily a realized relation of oneself to ~~impersonal~~ other selves, they may also be a relation of oneself to impersonal objects. An emotion contains relational elements plus pleasantness or unpleasantness which are elemental feelings.

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(1) Alexander F. Shand The Foundations of Character Chap. III.
(2) Quoted on page 37 in re instinct.

The supposed relation between degree and duration of physical stimulation and affective experience is not true to the facts. There is, rather, a large dependence upon the unexpectedness and intermittence of the stimulation. Pleasantness and unpleasantness are occasioned by the excitation of fresh or of fatigued cells in the frontal lobes of the brain, and the frontal lobe is excited by way of neurones from the Rolandic area of the brain. We may think of pleasantness and unpleasantness as having the following physiological accompaniments:

1. Pleasantness: slow, strong pulse; dilating arteries.
2. Unpleasantness: fast, weak pulse; bodily chill.
3. Pleasantness: quick, weak breathing.)Not so well
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4. Unpleasantness: slow, deep breathing.)substantiated.

Emotional reactions are either chaotic excess reactions (somewhat aimless) or coordinated hereditary reactions (survival reactions from the primitive stage of existence).

Emotion individualizes and makes one sensitive and responsive to environment. It is indirectly controllable; one cannot will to be happy but can indulge in those things that make for his individual happiness. Emotions are harmful when they interfere with essential habits and if they do not stimulate to active consciousness.(1)

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(1) Mary Whiton Calkins First Book in Psychology Chap. XI.

ROBERT S. WOODWORTH.

An emotion is a 'moved' or conscious stirred-up state of mind, or better, of the individual. Organic states are confused with emotions; it should be realized that they differ in that the former rise from some bodily process. Anger, for instance, is an organic state brought about through the functioning of the glands and the autonomic system. An emotional state serves as a preparatory reaction. The James-Lange theory which arrives at the conclusion that emotion consists wholly of sensations is inadequate since it does not explain why the internal response in fear and anger are often the same.

We must also distinguish between emotion and impulse. An impulse is a conscious tendency. The analysis of the whole emotional process would be something like the following:

1. Stimulus. Meeting a bear in the woods.
2. Recognizing dangerous situation.
3. Adjustment towards escape.
4. Internal preparatory reactions and external expressive (movements.
5. Conscious stirred-up state.
6. Definitive escape reaction.
7. Satisfaction and quiescence. (If you elude the bear.)

Impulse usually generates emotion, but the reverse may happen--as it does in the case of abnormal fears.

-Emotion consists of internal responses; instinct~~s~~ involves action on external objects. Emotion represents bodily readiness for instinctive action. Some instincts and emotions are linked together. Higher emotions are refined primary emotions.(1)

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(1) Robt. S. Woodworth Psychology Chapter VII.

P. F. VALENTINE.

A pure emotion is an instinctive phenomenon, being a response brought about through an inherited neural mechanism. We must go to the infant to find such pure emotions for they soon become modified by environment. Emotions often arise only after interpretation of the stimulus. Hence, we have certain simple and elementary emotions which become modified, multiplied and amplified by experience. The James-Lange theory may be true in its essence but it does not differentiate the emotions. Why does fear differ from rage? Why do both differ from pleasurable excitement? Fear and rage are the same in adrenal, liver, stomach, and heart action, and in arterial tension. Allport says that the difference is to be found in the total muscular response; in fear one is 'set' for escape, in rage for combat.(1)

Is consciousness a by-product or one of the adjustments? It seems to be on a par with the bodily reactions, indeed it may be spontaneous with the reaction. The consciousness of rage may arise from the reaction but how potent it becomes in the situation.

Why are some emotions pleasant and some unpleasant? The sympathetic and cranio-sacral divisions of the autonomic system may furnish helpful explanation. Qualitative differences among the secondary emotions are probably best explained by recognizing the complex nature of our habit organizations. It is a matter of the sum-total of our responses. Emotional differences in people are due to bio-chemical conditions in

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(1) Floyd H. Allport Social Psychology pp 91-93.

the neural structure. Smooth running or impeded brain action are the causes of pleasant and unpleasant feelings according to Woodworth;(1) this idea does not fit the facts since unpleasant stimuli may prompt a smooth-running reaction. It is habit that makes action run smoothly. All theories of pleasantness and unpleasantness have strong and weak points. We are capable of (1) pleasure tinged feelings when the familiar physical and mental habit-activities are unimpeded, (2) anger tinged feelings when an agent before which we feel relatively strong and competent threatens to deprive us of familiar habit-activities, or to thrust activities upon us which in some way conflict with our organization at that moment of experience, (3) and fear tinged feelings when our major habit-activities are threatened by a force or mysterious agency before which we feel actual incompetence.

Emotions can become attached to objects that do not originally evoke the emotion. (Watson's baby-rat-noise experiment is cited). Our primary emotions are passed on and built up. When one's habits become compacted about an object or idea to the extent that his feeling is involved, he will construct his thinking to accomodate and sustain the feeling.(2)

(1) Psychology page 172.
(2) P. F. Valentine The Psychology of Personality Chap. V.

CONCLUSIONS.

It is not the purpose of this section of the chapter to present a new theory of the emotions, but to indicate certain things upon which it would seem one might be able to depend; we hesitate to call them facts, but they may serve that purpose as a basis for further study. The limitations one has to face will also be indicated. For the sake of clarity the different phases examined will be enumerated and set apart from each other. The arrangement is neither historical nor logical; it cannot be as long as our knowledge of the subject is so limited.

1. The indications are that the emotions have no definite center in the brain. Neurone action undoubtedly takes place in emotion, but so far we must agree with Thorndike that nothing definite can be said about it.(1) Woodworth is of the opinion that the thalamus has some definite relation to feeling and emotion.(2) The British neurologist Head goes farther and asserts that the activity of the thalamus alone can account for the presence of pain in consciousness,(3) and Troland says in his support that, "the pain conductors have a definite center here, while the other nerves merely pass through the thalamus as a way station en route to the cerebral cortex."(4) There seems to be good reason for accepting the theory that the antagonism between the cranio-sacral and the sympathetic systems has much to do with what any particular emotion may be. It is quite plain

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(1) See page 51.
(2) Psychology page 65.
(3) Quoted by Troland Mystery of Mind p 70.
(4) Mystery of Mind p 69.

that emotion affects the whole of the individual and cannot be localized.

2. Emotions, as such, are not inherited but we have as yet no reason to say that emotional tendencies are not inherited. Watson's doctrine of learned responses does not account for the origin of the responses with which he begins.(1) Thorndike's contention that original nature is the basis of emotion, while it does not account for all the facts, does explain some not accounted for in any other way.(2) Emotion does have a close relation to instinct, although we can hardly go all the way with McDougall in pairing them off.(3) Emotion involves internal responses while instinct is outwardly directed; emotion is a preparatory reaction while instinct is an end reaction; the two are not identical nor are they invariably associated. A fly may light on a man's nose and be brushed away without emotion; if it returns repeatedly (which it commonly does) the owner of the nose will get angry. Most investigators recognize certain primary emotions. In a recent interesting article W. M. Marston listed the following primary emotions as the outcome of his experiments:

1. Dominance:-reenforcement reflexes set off by an opposition stimulus. (The baby fighting against being forcibly held.)

2. Compliance:-control of tonic motor discharge by a phasic reflex. (The baby reaching for a toy.)

3. Submission:-yielding to responses evoked by a stimulus.

4. Inducement:-reenforcement of submission response to induce further submission from another individual. (Two

(1)See page 49. (2) See page 51. (3) See page 47.

lovers each submitting to the domination of the other.) (1)

3. An emotion is aroused by a stimulus. It may be an internal or an external stimulus. Indeed it need not be even physical unless one reduces meditation and such processes to the physical.

4. Emotion has a distinctive quality. It is more than the sum of bodily adjustments, more than an affective aspect. This is in disagreement with McDougall who places emotional and sensory qualities on the same plane, (2) and in agreement with Miss Calkins who declares that the supposed relation between degree and duration of physical stimulus is not true to the facts. (3) Shand's criticism of McDougall's theory seems to be well-founded. (4)

5. Emotion cannot be reduced to just feelings of pleasantness and unpleasantness. There is no dividing line between the two. A single emotion may have both elements and often does. Valentine says that our habit organizations must be taken into consideration here. (5) The degree of resistance in the cortical synapses answers some questions, but the why of these degrees of resistance remains obscure. (6)

6. It will be noticed that most of the psychologists recognize the James-Lange theory as inadequate in that it does not distinguish pattern of response capable of arousing the different emotions. The theory functions on the lower levels of life but becomes increasingly barren as we ascend in the scale of mental organization. The movements accounted

(1) W. M. Marston Primary Emotions Psy. Rev. Mar Sept. 1927, pp 336-363.
(2) Page 47. (3) Page 53. (4) Page 52. (5) Page 56.
(6) Troland, page 50.

for by this theory are not of the consciously directed sort.

7. Emotions cannot be reduced to an ultima. We know some facts concerning them but not enough to reduce them to learned behavior, (1) or to identify them with sensation, (2) or to explain them SATISFACTORILY on a purely physiological basis.

8. Experiment in the field of emotion produces some gratifying results but is also disheartening in some respects. "The bodily effects of all types of emotional stimuli, moreover, are always greatly changed and diminished, frequently disappearing altogether, if the experimenter fails to put himself and the experimental conditions 'en rapport' with the subject, protective resistance to control of his emotions having become necessarily, the most habitual of all motor attitudes in the normal human adult." (3) Even by the introspective method we are frustrated, for the emotion is gone as soon as we begin the analytic process, and all we can analyze is the memory of it.

9. There is a close relationship between emotional experience and the functioning of the glands. Cannon demonstrates this convincingly in his experiments. He shows that taste, smell, and sight of food start the digestive process, it not being necessary to put food into the stomach. (4) Impulses in the sympathetic system augment the secretion of the adrenals; pain has the same function. (5) Emotional excitement increases the sugar in the blood. (6) Coagulation of the blood is hastened by pain and emotion. (7) Marston has the following criticism to offer: "Cannon does not differentiate the emotions sufficiently.

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(1) Watson, page 49.
(2) McDougall, page 47.
(3) Marston Primary Emotions Psy. Rev. pp 339.
(4) Cannon Bodily Changes in Pain, Rage, Hunger, and Fear. (p 5.
(5) Ibid pp51-9. (6) Ibid pp59-60.
(7) Ibid p 135-.

He points out physiological similarities, but no measureable differences between these major emotions."(1) The divisions are not as clear cut as Cannon makes them. For instance he assumes that the sympathetic system is always activated by fear but he also cites vagus impulses as other effects of fear.(2)

10. Emotion has a psychic quality. It is elusive but it cannot be ruled out on that account. Why do we feel so and so under certain circumstances? Why will a stimulus delight at one time and bore to tears at another? Miss Calkin's theory of fresh and fatigued cells in the frontal lobe of the brain furnishes a physiological answer to the last question, it is true; but that does not take into account that which is popularly called 'mood'. How can we tell whether a symphony or a comedy will appeal most strongly tomorrow night? (Provided we do enjoy either occasionally.) This of course introduces us to the unanalyzable concept of personality. Two of us might go to the symphony; one would enjoy it, the other would not. The stimulus is the same; differences in the organism cannot account for the different emotions aroused. So we are face to face with the crucial question: "How does emotional experience influence the subject?" Miss Calkins is undoubtedly correct in her assumption that both the subject and the object of emotion are realized as unique and irreplaceable.(3) She would say further that the self creates the emotion as a result of environmental influence.(4) Quoting Marston again, "The differential factor in emotion is

(1) Marston Primary Emotions Psy. Rev. p 337.
(2) Cannon Bodily Changes in Pain, Rage, Hunger, and Fear pp 51-60.
(3)(4) See pages 52-3.

not arrived at until after the original sensory impulses elicited by the emotional stimulus succeed in affecting relationship somewhere in the central nervous system with a distinctive pattern of motor discharge paths."(1) It follows from this that we cannot hope to find in any combination of sensation factors the peculiar character of an emotion. Furthermore since the true receptors for emotional stimulus lie within the organism it avails nothing to stimulate the same sense organs in different people.

An interesting sidelight on this phase of the question appears in an article by Helen Roberts in the Psychological Review for Nov. 1927. A native Indian sang for the phonograph eleven different songs over and over again: thirty-four repetitions in all. While fresh he tended to attenuate up and down trending melodic curves, sometimes sharping or flatting. When tired the tendency was toward acuation, especially in five repeitions of a song he disliked. In other words, he gave to the phonograph an unconscious record of his emotions.

11. Emotions may be expressed or inhibited and work good or harm. Inhibited emotions are usually harmful. Disuse tends to atrophy both the finer and the baser feelings. Our modern civilization is not conducive to the building of character. Emotionless people are dull people. A perfect man would be one in whom every emotion is in balance with its opposite, but he would be a bore. Emotions are safety valves. If they are good they should be expressed; if they are bad they should be sublimated and then expressed; thus emotional control is possible.

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(1) Marston Primary Emotions Psy. Rev. p 340.

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CHAPTER V.

MEANING.

This is not a new battlefield but merely a portion of the same one upon which we have been witnessing the charges and countercharges of opposing forces; hence we would expect a similar alignment of those forces here and such is the case. What is meaning? If we base mind upon sensation and seek to understand it by structural analysis alone we may produce a very plausible explanation--al least as far as the lower levels of life are concerned. If in addition to structural analysis we seek the why, the purposive or teleological element--if we seek ends as well as beginnings, then our explanation must needs go deeper and be less dogmatic. (This aura of uncertainty it is that causes some to cry, "Unscientific!")

A brief and temporary definition of meaning might be "consciousness of relations." Much simple meaning is consciousness of utility or adaptation, arising our of sense experience but not fully explainable by experience. The baby of the family sees daddy put on his hat a time or two and grasps the meaning that a hat is to be put on the head.

Allport gives us a good modern analysis of the problem from the sensation standpoint. He finds the foundation of the learning process in the conditioned reflex which may be described as an afferent neural pathway acquiring new efferent outlets. "No single law of human or animal behavior is of more far-reaching significance. Half of the process of education consists of transferring appropriate responses to new and more finely discriminated stimuli."(1) The responses of the

(1) Floyd Allport Social Psychology p 40.

infant soon become "conditioned." The attitude toward the hot stove is entirely different after the child has sustained a burn. Certain selective movements are made according to the trial and error process; these carry out the function of the reflex. Successful movements result in the fixation of reflex arcs. In the highest development of the reflexes the cortex is involved; this means reasoning. Thought is an abridged and highly efficient form of trial and chance success in the consummation of the prepotent reflexes. The supreme drive of the learning process is hunger; next is sex. Conditioned reflexes are formed with unusual facility under conditions of emotional excitement, prod~~d~~uced by autonomic responses to the stimuli employed.(1)

Woodworth voices the same idea as does Allport when he says that acquired reactions are modified native reactions, and when he bases all motor acts on the reflexes. The learning process is a process of strengthening, fixing, and combining movements, and of new attachments and detachments between stimulus and response. He gives us a summary of animal learning which has its significance for humans:(2)

1. Response to stimulus is eliminated when,
    a. It brings pain.
    b. It brings failure.
    c. The results is negative adaptation. (Getting used to things and thus paying no attention to them.)

2. Attachments or linkages:
    a. Substitute stimulus. (Dog associating food with ringing of bell.)
    b. Substitute response. (A new reaction attached to the original stimulus.)

3. New combinations of responses giving higher motor units.

(1) Floyd Allport	Social Psychology	Chapters II-III.
(2) R. S. Woodworth	Psychology	" XIII.

Thorndike also decries any theory that tends to take into consideration any element that is not observable. He throws out of court the following which he lists and calls three current popular opinions:

1. Attention, memory, reasoning, and choice are mysterious powers that load the dice in favor of certain reactions. He dismisses this as too naive for consideration.

2. Perception of response in connection with stimulus in another's behavior creates a bond between response and stimulus in the perceiving individual. The objection to this view lies in the fact that no evidence can be produced to prove it.

3. Ideo-motor action: the idea of an act or the result of an act tends to produce the act. About this he says: "The idea has to be connected with the movement or to the sensory stimuli to which the movement is the response by exercise or affect before it has an iota of efficiency in awakening the movement."(1)

Turning to the other school of thought we expect, of course, to find Dr. McDougall. He denies the validity of the association idea and declares that the mind does not begin by acquiring ideas of distinct particular objects. Associationism describes mental development as beginning with the cognition of particulars and advancing to cognition of the more general, whereas, in reality, we begin by cognition of the highly general and progress naturally to the cognition of particulars. Growth of the mind is a threefold process of discrimination,

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(1) E. L. Thorndike Original Nature of Man pp 174-181.

apperception, and association. By apperception he means the process whereby one discerns the essential similarities between objects and classes of objects which we have learned to discriminate and distinguish from one another. This results in the formation of systems. Association does not make ideas as per the older idea, it merely connects ideas or dispositions previously formed and previously differentiated by discrimination and logically ordered by apperception. The general product is a mind that is a network of cross-connections.(1) The apperceptive process is the point wherein McDougall's theory differs from the reflex, trial and error theory of Allport;(2) the former gives the same emphasis to the conative impulse(3) that the latter gives to the conditioned reflex.(4) McDougall finds in the 'hormic' element of all behavior an aspect of conscious experience which defies laboratory analysis. (The charge that this is a philosophical concept carried over into psychology is not without foundation.)

Pillsbury links the two terms meaning and concept since he declares that neither would have any significance were it not for the other. Meaning is the fact that one bit of mental content represents or stands for something else. At first it is little more than a mere process of association or connection through contiguity. A baby stops crying when it sees the bottle coming; a man's name recalls the picture of the man. And since it is possible to dissociate meaning from the word, Pillsbury reasons that meaning is conscious. Woodworth

(1) Wm. McDougall Outline of Psychology Chapter XV.
(2) (4) See Pages 65-6.
(3) See Page 46.

recognizes the possibility of a certain kind of imageless meaning.(1) In speaking of concepts Pillsbury says that they develop from sensory images and are gradually divorced from them. Knowledge is a system of such concepts; we understand that which can be referred to a concept, without them not even consciousness is possible.(2)

Coffin recognizes two laws of learning: assimilation and organization. The first law is apparent in the presence of a strange object in the child's field of consciousness which is to him a sufficient stimulus to cause his reaction to it; he reaches out mentally as well as physically to assimilate it by relating it to his past experience. The object is perceived and classified according to his past knowledge; the snow is pieces of white paper falling, the fern is a pot of green feathers, and the scissors are asleep when closed and awake when opened. The second law includes mental discrimination and differentiation. A man and a dog looking at an automobile see two entirely different things. Coffin likewise gives large place to the element of consciousness in meaning.(3)

According to Spearman all learning starts with the sensory states of quality, intensity, spatiality, and temporality. Any lived experience tends to evoke immediately a knowing of its characters and the experiencer; and the mental presentation of any two or more characters tends to evoke immediately a knowing of relation between them; it

(1) R. S. Woodworth   Psychology   p 374.
(2) W. B. Pillsbury   Fundamentals of Psy.   Chapter XIII.
(3) J. H. Coffin   Personality in the Making   "   IV.

follows from this that the presenting of any character with any relation tends to evoke immediately a knowing of the correlative character.(1)

Homer B. Reed in a recent article deplores the great multiplicity of laws of learning, likens them to James' 'blooming, buzzing, confusion' and then gives us three more, or rather he endeavors to gather up all laws that are worth while and restate them in concise fashion. He recognizes the problem to be threefold:

1. The formation of connections.
2. The strength of connections.
3. The elimination of false reactions.

Under (1) he restates three laws: First--the law of contiguity--If one of a series of reactions is repeatedly made to a group of contiguous stimuli, one of these stimuli will later be sufficient to provoke this reaction or series of reactions. This restatement is supposed to take account of the necessity of response. Second--the law of similarity--to make it agree with the stimulus-response concept: If an organism meets in a new situation elements similar to those to which it has made response before, it has a tendency to repeat these reactions. Third--the law of relationship--relationships are observed in groups of stimuli and then adaptive reactions are made to them. These three laws then account for the formation of connections. The strength of connections is explained by the law of exercise and its sub-laws of frequency, recency, and intensity. The elimination of false reactions is explained by the law of effect. (Trial and error method.) This appears

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(1)C. Spearman The Nature of Intelligence and the Principles of Cognition. Chapter IV.

to be another straight sensationist-system, but Reed leaves a place for what he calls 'set;' a general neural trend that controls the operation of all the laws with respect to adaptibility. The what and the why of the neural trend is not stated.(1)

A recent theory which is having much discussion in connection with the meaning problem is that of the Gestalt, another form of protest against atomistic psychology. Humphrey has given the theory a concise statement: "First, that the structure is more than its parts--the example given in the original connection is that if the notes of a melody are each given to a different man, the resulting effect is not the melody, to obtain which the parts must be brought into functional relationship with one another; second, the structure can be transposed (may occur with specifically different tones:) third, which is added by Köhler, is that the separation brings alteration of the parts."(2) Conscious experience is regarded not as a bundle of sensations but as a unit, the grasping of patterns rather than isolated units of content. The supporters of the theory have based their conclusions on two lines of investigation: (1) An experimental study of human experiences mainly conceptual, and (2) A study of the behavior of animals indicating the unitary character of many experiences. They have striven to show that a perception cannot be merely a number of elements of experience, but that it must have a structure of its own; all perceptions must be structural totalities before they can be perceptions.

(1) Homer B. Reed The Essential Laws of Learning or Association. Psy. Rev. pp 107-115.
(2) Quoted by J. B. Miner in Psy. Rev. Jan. 1927. p 19.

Köhler in his experiments with the apes has made perhaps the most notable contribution to the theory. Here is one of his conclusions: "In the field of the experiments carried out here the insight of the chimpanzee shows itself to be principally determined by his optical apprehension of the situation; at times he even starts solving problems from a too visual point of view, and in many cases in which the chimpanzee stops acting with insight, it may have been simply that the lay of the land was too much for his visual grasp (relative weakness of shape perception)." "It is therefore difficult to give a satisfactory explanation of all his performances, so long as no detailed theory of shape (Gestalt) has been laid as a foundation. The need for such a theory will be felt the more, when one remembers that <u>solutions</u> showing insight in this field of intelligence necessarily take part in the nature of the structure of the situations, insofar as they arise in dynamic processes <u>co-ordinated with</u> the situation."(1)

Mental phenomena are not regarded as static, but as a stream in which all of the past and indeed all of the future are blended. This means a new relatedness of present sensation with images and knowledge previously gained as a result of engraphic reaction. (An engram being the structural organization of the organism which determines response to stimuli.) This results in the emergence of a new perception, each of which is a true emergent, coherent in itself, and having its own organization and form; this is its essential nature, part of a perception is meaningless. The significance of this for

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(1) Wolfgang Köhler Mentality of Apes pp 277-8.

the learning process is readily seen. It would follow that the mentally weak could experience Gestalten of a simple nature only.

Koffka applies these principles to the infant, declaring that the consciousness of the new-born babe is more than a confused mass of separate sensations which he gradually learns to associate. The behavior of an infant does not suggest the presumption that experience is made of perceptions by the associational method. There is no good reason to assume that the new-born child possesses an abundance of mental phenomena; in fact the contrary is indicated by the observation that there are but few motives that can set him in action. If the theory of original chaos were correct one would expect that the simplest sort of stimuli would get the best response, but the infant reacts more strongly to the complex, for example: the human voice and the human face are complex stimuli, yet they gain a strong response, the infant responding to an angry face differently than he does to a smiling face. It is further stated that the first experience of a child is that of a figure on a background; from this emerges the quality called configuration. (Köhler does not like this term. He says: "I do not think that the term 'configuration' is quite adequate as a translation of the German word Gestalt. The word 'configuration seems to mean elements put together in a certain manner, and this is a functional idea which we must carefully avoid.")(1) If this quality is not grasped the figure is not seen. This is demonstrated in the case of

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(1) W. Köhler Psychologies of 1925 p 180.

patients in certain subnormal physical conditions. (1) Koffka illustrates this by a test he made with hens wherein he trained them to choose the lighter of two pieces of gray paper as a means of procuring food. When the darker of the two papers was removed and one lighter than the remaining one put in its place the hen did not tend to return to the one whereon she obtained food before, but to the newly added piece, indicating that the original stimulus was not that of a certain shade but rather of a certain quality as compared with the other. (2)

Thw whole theory assumes that a certain order dominates experience from the beginning; in other words order precedes rather than follows experience. If this is so it does shed considerable light on the early development of consciousness and has real pedagogical value.

In criticism of the theory it might be said that it is in danger of assuming too much for itself, a common fault of new theories. Miner asks the significant question: "May not purposive striving and the Gestalt be instances of the genetic sequence in which a new characteristic appears during the sequence or with the end result? In other words, are not the Gestalt and purposive striving genetic sequences?" (3) Furthermore analysis does not necessarily mean atomism as the theory seems to assume. It also tends to overlook the experiencing individual as a unifying principle. In justice however, it must be admitted that the theory helps mightily at the time when experience seems to be getting under way and before there

(1) Kurt Koffka Growth of the Mind pp 140-42.
(2) Same p 138.
(3) J. B. Miner Psy. Review, Jan. 1927. p 23.

is any adequate person to do the organizing. The significant point in the whole thing is that situations, not units, are the important elements of growing experience.

Koffka also gives us light on another aspect of the subject. Mental development, he says, is in four directions:

1. Motor learning seen in walking, reaching, playing, etc.
2. Sensory learning in color perception, space recognition, etc.
3. Sensory-motor learning in imitation, shunning burns and hurts, etc.
4. Ideational learning in use of language, when things are named and counted.

He makes all learning depend upon memory, and his point is easily seen. At birth the infant's behavior shows that memory images participate but little, when they do they are tied up with perception, and are without temporal or spatial definition. The infant completes some objective act of behavior which soon comes to involve a true component of learning. The background of consciousness acquires a fixed level upon which separate phenomena make their appearance. (1) Broad asks the following question and then sums up the answer to it in eight points: "What is the mind doing when it is perceiving a material object?"

1. The perceptual situation contains two constituents, one objective and the other subjective.
2. The objective constituent is a sense-field with a certain outstanding sensum, the latter being the objective phase of the perceptual situation.

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(1) Kurt Koffka Growth of the Mind pp 143-150.

3. The subjective constituent is a mass of bodily feeling, together with certain specific emotions, muscular sensations, feelings of familiarity, etc.

4. The latter are produced through the excitement of certain traces by the apprehension of the sensum.

5. The sensum is apprehended by entering into a certain specific relation with the general mass of bodily feeling.

6. The situation has a certain specific external reference in virtue of a certain specific relation between the apprehended sensum and its mnemic consequences in the way of feeling, etc. (These mnemic traces are lasting modifications impressed on the organism as a result of activation on some previous occasion.)

7. Pure sensation is an ideal limit, approached as external reference grows vaguer and vaguer.

8. The notion of a physical object is not abstracted from the data of sense. It is a category of the mind.(1)

Thus it appears that Broad recognizes that unobservable something over and above sensation.

The relation of the subconscious to the learning process is so vague and uncertain as yet that nothing very factual can be said about it. Jung defines it as the sum of all those psychological events which are not apperceived, those psychological elements which cannot pass the threshold into consciousness.(2) Jastrow says that the mystery of the subconscious is the mystery of association itself.(3) It is a commonly reported fact that a telegraph operator can sleep on

(1) C. D. Broad Mind and its Place in Nature pp 218-220.
(2) C. G. Jung Analytic Psychology p 278.
(3) Joseph Jastrow The Subconscious p 78.

while his instrument ticks continually, but will awaken the instant his own call comes. Some sort of selective attention would seem to have been going on while he slept. "Tartini heard the devil play a wonderful sonata and on awakening he was able to set it down."(1) The mystery, however, does not have that eerie quality of the completely unknowable for "the processes that come to light conform to the typical conscious association of ideas; whenever we successfully trace the steps of an intent, deliberate sequence of thought,---like the spider climbing back by absorbing the thread that has just been launched---we come upon just such links and ties in the mental chain."(2) "There exists in all intellectual endeavor a period of incubation, a process in great part subconscious, a slow maturing through absorption of suitable pabulum."(3) Undoubtedly the subconscious is some sort of storehouse upon which the mind can draw in some peculiar way. Try as I may I cannot think of the name I want; I give up and turn my mind to other matters and become suddenly aware that the name sought for has come into consciousness.

The problem of meaning also involves that of reasoning. According to Pillsbury reasoning is called into operation because of the lack of a suitable concept to which a difficulty can be referred; one after another is tried until one is found that fits the need and the process is then completed, the result being belief or proof.(4) Edman says that reflection begins either in a maladjustment between the individual

(1) Joseph Jastrow The Subconscious p 73.
(2) " " " " p 77.
(3) " " " " P 99.
(4) W. B. Pillsbury Fundamentals of Psychology p 423.

and his environment or in a conflict of impulses within the same person; it is not a thing but a process.(1) Gordon sees the process as a movement among the engrams.(2) "In this process, every efferent conation of one engram, becomes immediately an afferent cognition for the next, and hence thought is a development on the cognitive side, and, by reason of the cortical functions of integration and discrimination, one thought can be compared with another. Thought may be the mental correlate of the activation of cognitive neurones in the higher realms of the cortex."(3) Hence, reflection is but another expression of need, an effort of man to better himself in some way. His habits or instincts aid or impair his power of reflection, so while all the questions concerning it cannot be answered, it is possible to exercise great control over it.

An interesting aspect of this subject of meaning is the part played by attitude. An attitude is a high level of attention directed toward some object; it is accompanied by emotion and nearly always by some drive or urge of some sort; it has, also, a prominent cognitive element. Instincts, emotions, training, suggestion, and imitation all furnish a basis for attitude. A man's attitudes are his mental habit-systems. They are points of departure. While they have a solid basis they are at the same time greatly modifiable.

(1) Irwin Edman   Human Traits   p 48.
(2) (3) R. G. Gordon   Personality   p 99.

CONCLUSIONS.

1. The problem of meaning is subject to one of two major emphases: sensationalism or purpose (conation, teleology, etc.)

2. The majority of thinkers agree that there is something to mind that is not yet within reach of the analyst.

3. On the lower levels meaning is satisfactorily explained on a pure sensation basis; but it becomes increasingly difficult as one ascends the scale.

4. At present it seems to be the best we can do to carry analysis as far as possible and then assume consciousness of a particular sort--the consciousness of relations, which we cannot derive from sensory data. McDougall and Spearman and some others assume a principle of cognition which is, of course little more than furnishing a specification of consciousness itself. This saves from the mechanism of the Behaviorist and from the sensation-association formulas which may describe but never explain.

5. It must be remembered that consciousness itself is an emergent which appears when there are no adjustive responses ready in the organism.

6. The Gestalt theory is a great help toward an understanding of the dawn and emergence of meaning. Situations, not units, are seen as the important elements of experience.

7. The subconscious is a storehouse upon which the mind draws, and into which matters which were once in the mind sink.

8. Reflection is man's noblest effort to control his environment. To reflect is to query a stimulus.

9. Reflection is in part guided by attitude over which man has great control.

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CHAPTER VI.

VOLITION.

Whta is generally called will, whether it be affirmed or denied by theory, as a recognized fact in human society. The world's affairs are conducted on the basis of the assumption that man achieves some measure of conscious control. Hence if he acts as society thinks he should he is commended, if not he is sent to jail or to the electric chair. Behavioristic psychology takes little notice of anything called will or volition, and gives no explanation at all why the character of a good man is often regulated by the prompting of his *weaker* desires. William James puts this idea in a strikingly simple diagrammatic form, thus:

Ideal, per se. Native propensity.
Ideal plus will Native propensity. (1)
(effort)

What then is this determining aspect of character? Is it a transcendent and spiritual something, a pure delusion, or something entirely different from either?

We can divide our acts into two classes: voluntary and involuntary. The latter is reflex or instinctive, an adaptive act of the organism, although it must be admitted that even here there is always an indirect striving toward some end. A typical voluntary act is preceded by the imagination of some change in the existing situation; in a sense it is an intervention between the reflex-instinctive and the habitual. According to James, and the conclusion seems tenable: "Voluntary movements must be secondary, not primary functions of our organism."(2)

(1) Wm. James Principles of Psychology p 549.
(2) " " " " " p 487.

Distinctly voluntary acts spring from a choice: a hesitancy between two tendencies. After the end is chosen the volition is complete. The classic example is Buridan's ass starving to death between two shocks of hay since he could not decide which should constitute his dinner.

Can we find a physiological basis for volition? The psycho-analytic school would not hesitate to make the pronouncement that all of our actions and conations gain their energy from instinctive sources; the instincts at work result in the complexes, which in turn control the further working of the instincts and the whole life of the mind. (1) McDougall would agree that the instincts form the groundwork of the mental structure of the mind. (2) Meumann, the German investigator, finds a physical basis for the will act and asserts that weak nervous constitutions are accompanied by weak volitional activity. (3) No doubt there is a definite relation existing between healthy physiological function and volitional activity but at the same time it seems to be an unwarranted step to find the full explanation in the workings of the organism. The drainage theory propounded by James and others (4) seeks to furnish an explanation: Each person is controlled by a number of interest systems which are the result of his experience; when an impulse arises in the mind the widest and deepest system drains the impulse through its (the system's) accustomed channels, hence the favored system controls the situation. But why? Does a free psychic agent emerging from the soul or mind determine the favored system?

(1) A. C. Tansley The New Psychology pp 34-5, 192, 287.
(2) Wm. McDougall Social Psychology 15th. ed. p 22.
(3) See Roback Psychology of Character p 221.
(4) Wm. James Principles of Psychology p 584-5.

The only answer must be speculative and that can have no place here; it would bring up the whole body-mind problem with its manifold philosophical and metaphysical distinctions and implications. Suffice it to say that there is no good reason for denying the interaction of the two; there is less reason for allowing body to affect mind and refusing to grant the mind power to affect the body. The simplest occurences of life imply interaction. All theories that would seek to provide a parallelism of mind and body are too far-fetched to be useful or significant. The laws of sequence and concomitant variation will not furnish our needed solution.

Alexander Shand definitely relates willing to the emotions and sentiments, which he regards as the foundations of character. He says: "It may easily be urged that the will is not an independent force--at least, in the beginning, or before it develops the power of real choice; that it is an expression of the tendencies of the emotions and sentiments; that in them its innate qualities are manifested, and its acquired qualities developed."(1) He declares further that the strength or weakness of will varies with the strength or weakness of the emotion behind it, but at the same time he agrees that there are also innate differences--the backlying something which is still more or less of a mystery to psychologists who insist on recognizing <u>all the facts</u>.(2)

Though the element of mystery still remains, scientific inquiry is by no means rendered unproductive, but is rather under the obligation to be more painstaking and thoroughgoing

(1) Alex. Shand The Foundations of Personality p65.
(2) Same p67.

than ever. Hypothetical explanations cannot be countenanced until science has exhausted itself in its search for facts and their relations. Since volition cannot be accounted for on a purely physiological basis we can assume for further investigation that it is an aspect of mind; by this it is not meant that it is a faculty or force as such. McDougall says that will is "the working of the conative impulses that spring from the instinctive dispositions, impulses working, not sporadically and in detachment from one another, but within a delicately balanced and more or less harmoniously unitary system."(1) Miss Calkins calls it an "assertive consciousness."(2) If we recognize a scale of conations running from the lowest to the highest we might consider will as a specially complex case of conation having its foundations in innate disposition or instinct, or in some acquired instinct or both. At any rate will is high in the scale. Volitional action is deliberative action involving the entire psycho-physical process. "It is clear that in the volitional act the whole of consciousness is brought together and focused on the solution of an adjustment problem; and all of the sub-processes of interpretation and appreciation are woven together as strands into the complicated process which we call volition."(3) The feeling side does enter into volition; the factor of value, present or future, is also an important component. Miss Calkins declares that along with the sensational factors will includes a consciousness of (1) futurity, (2) connectedness, and (3) realness.(4) Will,

(1) Wm. McDougall Outline of Psychology p 447.
(2) Mary W. Calkins First Book in Psychology p 228.
(3) Jos. H. Coffin Personality in the Making p 121.
(4) Same as (2) p 231.

then, has no structural element like emotion or sensation; hence we can say very little about its neural conditions. "Volition, or will, is not the simple power it is popularly supposed to be, but an exceedingly complex response involving the whole mental organization."(1)

Since will involves the entire psycho-physical process, and this process is the result of experience, (using the term in its broadest sense) it would follow logically that will is one of the developments of the organization of experience in the life of the individual. A volitional act is an act of balancing ideas and deciding between them, the ideas coming from past experience; it is consciousness under the specification of choice of meanings or values with reference to the self. What is a purpose but imagining oneself in a better condition or situation than the present one? Hence, "the choice which an individual makes to-day has its roots in the experiences of yesterday and of the earlier education before yesterday."(2) Speaking of habit John Dewey says that its essence is not predisposition to particular acts but to modes of response; it means will.(3) This seems to be a little far-fetched as does the statement of H. H. Goddard that, "volitional action or will is a matter of neurone patterns, which in turn is a matter of inheritance plus experience."(4) Pillsbury has somewhat the same idea but his putting of the proposition is more acceptable since he does not dogmatically reduce volition to the physiological. "When the will acts, it acts in the light

(1)F. L. Strickland Psychology of Religious Experience p 29.
(2)Chas. H. Judd Psychology p 306.
(3)John Dewey Human Nature and Conduct p 42.
(4)Quoted by Valentine Psychology of Personality p 194.

of the motives; it is an expression of the nature of the man; and that in turn is dependent upon his instincts and training, his immediate purposes and his general ideals." (1) In other words Pillsbury leaves the way open for other than physical factors. It is safer to couple purposes and ideals with the instincts and training because the former are facts of life just as clearly as are the latter. Evidently we have a basis of meaning consciousness upon which control through consciousness (volition) is built. The emergence from non-voluntary reactions to those called voluntary is gradual and depends upon the degree of consciousness preceding the action.

If volition is largely a matter of experience can there be such a thing as free will? Certainly the extreme libertarian position is untenable; but determinism as a conclusion in not a whit more logical. This question is not as vital to-day as it once was; modern psychology tends to obviate it altogether. Some, as we have shown, believe that a person can consciously direct his organism, but his capability along that line is limited by his experience. This cannot be proven, while on the other hand there is evidence to indicate that the mind has real creative activity or ability. While volition is an active correlate of organized experience it is not necessarily determined thereby. A person is aware of the fact that he can do one of two or more things in a situation; the student can drive himself to study in the evening or take himself to a play; past experience may of course influence his decision, but he knows that he can go contrary to past experiences if he so chooses. As was stated in the opening page of the

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(1) W. B. Pillsbury Fundamentals of Psychology p 533-4.

chapter the world is run on the basis of human responsibility for acts committed, and this is usually taken to mean some measure of freedom of will. Hence for modern thought the problem is one of ethics more than of science; psychologically it is outgrown rather than solved.

Does volition have an essential mark or characteristic factor? Granted that it is largely a matter of habit systems and that it must operate through the laws of the mind, and that it has no structural element, what is there about it that causes us to recognize its existence? James said that: "Volition is a psychic or moral fact pure and simple, and is absolutely completed when the stable state of the idea is there. Will's great achievement is to hold an object before the mind and attend to it. This is it's fiat."(1) A more recent writer says: "What is commonly known as will is simply another name for the power and momentum of a man's personal self. Will exists not as a thing but as a process. Will is the whole complex organization of the permanent self set over against an alien intruding impulse."(2) Judd agrees substantially with the foregoing: "Voluntary choice is the fullest expression of the developed normal self. When a man chooses, he expresses his personality. This is the essential fact about volition; choice is not an arbitrary sudden mode of thought or action; it is, rather, the consummate expression of all that has entered into individual life."(3) Dewey calls will the "personal aspect of causation,"(4) and Pillsbury designates it as the "Whole man active."(5) Jastrow asserts that the quality of will is the

(1) Wm. James Principles of Psychology p 560-1.
(2) Irwin Edman Human Traits p 153.
(3) C. H. Judd Psychology p 307.
(4) John Dewey Human Nature and Conduct p 44.
(5) W. B. Pillsbury Fundamentals of Psychology p 534.

combined resolution and restraint that remains dominant in connection with the support of intellectually and emotionally guided conduct.(1)

What is it then that prompts a man to do as he does especially if his acts are worthy of commendation? As one follows the reasoning of different writers a few of whom have just been quoted the same note sounds again and again, like the haunting phrase running through a symphony: the whole man, the self, his personality, etc. A person does choose the difficult when the easy thing could be chosen. Two persons may face the same possible choices; they will choose differently. Why? Native differences and strength of emotional reaction no doubt affect the choice, but few there are who will assert that they determine it entirely. Will has some sort of deep root that has not as yet been discovered; but that gives us no warrant to regard it as some ethereal essence. In an act of will the beginning is marked by some idea or aim, and the end with execution. In the process a mental act called decision emerges.(2) In this connection Strickland says: "Here we must reckon with purpose, the characteristic factor in a true volition--the element in our experience which cannot be explained by the usual synthesis of neural factors."(3) It is a fact of common experience that one can by effort of will retain in the mind an idea that otherwise would be crowded out. In deliberation two ideas are held before the mind until one is chosen as a course of action; in resolution one idea is held before

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(1) J. Jastrow Character and Temperament p 246.
(2) See Valentine Psychology of Personality p 186-7.
(3) F. L. Strickland Psy. of Religious Exp. p 37.

the mind until some definite action is taken toward it; in recalling a forgotten name the person is held before the mind until the name comes. The whole self enters into these operations and where decision must be made the personality is often thrown on the side of the originally weaker motive. It was James' opinion that the will performed an inhibitive function, driving out all other ideas so that the favored one could persist of its own energy,(1) but this leaves us stranded again since we do not know how the will inhibits. It seems to be more true to the facts to think of the will as reinforcing the dominant idea; thus it would operate in somewhat the same fashion as desire.

Is it possible to educate the will? It would appear that we must answer in the negative since we cannot get at the seat of the will in any definite manner. Yet we do not know just what electricity is but we can control it and make of it an obedient servant. The race might well be thankful that a knowledge of ultimates is not necessary to progress. McDougall calls the will "character in action."(2) When one admits that man has any control whatever over his actions he at the same time admits the possibility of an educated will. John Stuart Mill said that "a character is a completely fashioned will."(3) The will is the fiber or stamina that gives character to man. "As far as the individual is concerned organization of conduct can come only through intelligent volition."(4) Will is a

(1) Wm. James Principles of Psychology p 525.
(2) Wm McDougall Outline of Psychology p XX442-3.
(3) Quoted by Valentine Psy. of Pers. p 184.
(4) J. H. Coffin Personality in the Making p 121.

trail-blazer. Miss Calkins pictures it as an autocratic dictator: "Will is a consciousness of my active connection with other selves or with things, an egoistic, imperious, relation, a domineering mood, a sort of bullying attitude."(1) Jastrow connects the will with energy: "Possibly the largest difference among men, speaking pragmatically, is this of energy and its emotional counterpart, courage."(2) The will supplies effective stimuli when the natural ones fade.

If we could picture will going into action we would see a process involving four steps: (1) First of all there would be the need of a definite purpose or aim, possibly an ideal to be achieved; (2) There would be the need of some ability to see the future, the end from the beginning, including some idea of the road that must be traveled; (3) Decisions must be made, perhaps a clash of wills will take place; (4) Strong morale must be ever present, this would be a product of experience embracing those outcomes which we have learned to be the best, and outlining for us the pathway which, in the long run, will lead to the desired destination.

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(1) Mary W. Calkins First Book in Psychology p 226.
(2) Jos. Jastrow Character and Temperament p 299.

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CHAPTER VII.

TEMPERAMENT.

The question of temperament is as elusive as it is interesting. Jastrow calls it a composite inherent bent of nature and says further: "Temperament is nature specialized upon the bais of a temper of qualities of a common inheritance, expressed in and through the functioning of the nervous system."(1) It is a sort of biological essence of original nature and has definite relation to the great psychological complexes. It is commonly confused with character or else it is thought of as being with the individual from the beginning while character is a later development, a result of the growing and learning process. We could think of temperament as being innate character, the mode in which a man is affected by the different stimuli of daily life. We might call it the sum of the innate tempers of his different emotions. Emerson has represented temperament as an inner destiny against which it is vain to contend. This is no doubt an extreme putting of the idea but Miss Hinkle would support it to the extent of saying that the basic types are born, not made.(2) While the influence of heredity is apparent, there is reason to believe that training may have a transforming influence. If we must define temperament we might say that it is the predominant manner in which a person reacts to his environment; it is expressed in sensibilities, primary emotions, and response to situations--particularly primitive situations. It is inseparable from character although the former is probably

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(1) Jos. Jastrow Character and Temperament p 248.
(2) Beatrice M. Hinkle The Re-Creating of the Individual p 267.

the more fundamental--the foundation upon which the superstructure is erected.

The physiological background of temperament is to be found in the nervous system. Two important factors seem to be involved: (1) Functional peculiarities of the nervous tissue and (2) Influences exerted on the nervous system. Concerning the latter Miss Hinkle has two thought-provoking things to say: "In the primary shock of birth might be found an important factor bearing upon the great distinction between the two major divisions of extravert and introvert." She thinks the introvert would experience the more profound shock. Quoting further: "One individual would be more sensitive to the effect of sensations coming from without, and another more affected by the self-generated impulses arising within the organism itself."(1) Strickland in a recent article gives us an excellent summary of the physiological background of temperament: "Temperamental differences and capacities depend upon certain conditions in the physical organism, such as rate and strength of heartbeat, speed of nerve current through the nerve fibers, and also upon the relative activity of certain internal glands which pour their secretions into the blood stream. --- Traits, by which we mean characteristic ways of reacting, may be either inherited or acquired, though the conditions for the favorable development of abilities are determined by bodily structure and the quality of the nervous system and hence are matters of physical inheritance."(2) It would seem from this that

(1) B. M. Hinkle The Re-Creating of the Individual pp 269-71.
(2) F. L. Strickland Determining Temperament
Zion's Herald Feb. 1, 1928.

temperament is more or less fixed and it is; throughout life a man will be biased but not necessarily controlled by it. By deliberate choice a person may remodel his temperament and make of himself a new creature.

These considerations raise the question as to whether or not there exist certain fundamental types--basic preformations of character. Galen as far back as 150 A. D. divided and placed the race in four different compartments, and most remarkably had a chemico-physiological basis for his findings. His classification follows:

1. Sanguine	warm-blooded	friendly uncle type.
2. Choleric	yellow bile	Cassius-lean and hungry.
3. Phlegmatic	sluggish bile	plodder and follower.
4. Melancholic	black bile	hypochondriac.

It can be said for this ancient classification that it resembles present conceptions regarding the influence of the ductless glands. But of course they are determined by a combination of conditions rather than by any single factor. The traditional method of classifying the temperaments usually proceeded on the basis of three fundamental propositions: (1) characteristics of external appearance, (2) qualities of character sometimes found to co-exist, and (3) predominance of some bodily organ or system to account for the coexisting characteristics. How would a man be classified under the above system if he lacked the qualification of some extreme trait? The lack of an answer to this question leads to the conclusion that any such system is inadequate for the following reasons: (1) The assumption that if a quality is in one or even in a majority of cases of mental processes it is in all is untenable, (2) the types are based upon conceptions of quantities that

are indefinable in amount, (3) the whole table is thus exaggerated and artificial, and (4) inferences are drawn only from the visible and cannot be exact. The temper of one emotion cannot be assumed to attach itself to other emotions in the same person. In this same connection Gordon says: "It was impossible to demonstrate any facts to support the inference that these types had anything to do with the special variations in the liquid constituents of the body."(1)

Considering the modern classifications we have an interesting one from James; he has two main divisions with eight subdivisions under each as follows:(2)

Tender-minded	Tough-minded
Rationalistic(guided by principles)	Empirical(guided by facts.)
Intellectual	Sensational
Idealistic	Materialistic
Optimistic	Pessimistic
Religious	Irreligious
Free Willist	Fatalist
Monistic	Pluralistic
Dogmatic	Skeptical

Jung's classification is very suggestive and not without much practical value:(3)

Extravert-Sensational	extravagant in emotion.
Introvert-Sensational	mourns or rejoices by himself.
Extravert-Intuitional	ecstatic.
Introvert-Intuitional	visionary--new inspirations.
Extravert-Feeling	may make fool of himself.
Introvert-Feeling	less tolerant of fools.
Extravert-Thinking	man of affairs.
Introvert-Thinking	high degree of inspiration.

The sensation and feeling types seem to overlap considerably and the intuitional types lack the stamp of practicality.

Jastrow distinguishes four types, using the same term-

(1) R. G. Gordon Personality p 63.
(2) William James Pragmatism p 12.
(3) C. G. Jung Psychological Types Chapter X.

inology for each, the difference being found only in emphasis. The capital letters indicate the preponderance of the particular phase emphasized:

sensitive-ACTIVE type	Sanguine(?) practical executive.
SENSITIVE-active type	Melancholic(?) reflective-deliberate.
SENSITIVE-ACTIVE type	Choleric(?) energetic.
sensitive-active type	Phlegmatic(?) easy-going. (1)

A classification of this sort tends to emphasize the obvious fact that temperamental differences are not so much a matter of equipment, but of the manner in which equipment is used.

Kretschmer finds the basis of the temperaments in two main interacting systems: (1) the psychic apparatus--sense-brain-motor equipment, and (2) the chemistry of the blood and the humors of the body. The latter influences (a) psychomotility, the movement tempo; (b) psychoaesthesia, a technical term for sensitivity or insensitivity to psychic stimulations; (c) mood-coloring, the pleasure or unpleasure tone of the physique content; and (d) psychic-tempo, the acceleration and retardation of psychic processes in general. He in common with other psychologists recognizes two main groups of temperaments, groups with awe-inspring names:

	Cyclothymes	Schizothymes
Poets	Realists Humanists	Pathetics Romantics Formalists
Experimenters	Observers Describers Empiricists	Exact Logicians Systematists Metaphysicians
Leaders	Tough whole-hoggers Jolly Organizers Understanding Conciliators	Pure Idealists Despots and Fanatics Cold Calculators

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(1) Jos. Jastrow Character and Temperament pp 255-6.
(2) E. Kretschmer Physique and Character pp 251-262.

Kretschmer also asserts in his technical way that the direct action of the brain can cause noticeable modifications of temperament. This significant idea saves one from being dominated by a one-sided view of the secretions and their power.

Abraham Myerson, the author of a work which is more popular than scientific in its appeal, uses energy and emotion as his basis of division. One questions his reliability because his emphasis is so completely physiological. He recognizes a half-dozen varieties under each of two main types: the kinetic and the emotional.(1)

These various tabulations reveal diversity of opinion but also reveal more striking points of general agreement. First of the the connection between bodily and mental states seems to be accepted without question. A man's behavior is very clearly dependent to a large extent upon the organization of his bodily functions. (Myerson would make this an absolute rule; man for him is an engine.)(2) Disease and injury alter every activity of the body and mind. The departure of personality from the normal depends upon abnormalities of growth, whether bodily or mental. The how and the why of all this has been in the dark until recently; all is not yet revealed but there has come enough light to enable one to say that the darkness no longer reigns supreme. The world war has brought to light certain facts in this connection by furnishing an unlimited number of experiment cases over a wide range of physical and mental disorder. It has been demonstrated that

(1) Abraham Myerson Foundations of Personality Chapter XVII.
(2) Same p 22.

certain glands have much to do with what a person shall make of himself physically, mentally, and spiritually. Berman's work on the "Glands Regulating Personality" is somewhat too enthusiastic but some interesting facts are to be found there. He claims to be on the track of finding the formula of the soul,(1) reminding one of the search for the philosopher's stone and the fountain of perpetual youth. He fails to recognize that there may be a component part of that formula that cannot be found--at least where he is looking for it. The following table is designed to give in the briefest possible way his idea of the glands and their functions:

Name of Gland	Secretion	Function
Thyroid	Thyroxin	Energy production
Pituitary anterior	Unknown	Growth of skeleton
Pituitary posterior	Pituitrin	Energy consumption
Adrenals		Glands of combat
Cortex	Unknown	Brain Growth
Medulla	Adrenalin	Energy for emergency
Pineal	Unknown	Brain and sex
Thymus	Unknown	Gland of childhood
Interstitial	Unknown	Secondary sex traits
Parathyroids	Unknown	Controllers of lime (metabolism. Excitability (of muscle and nerve.
Pancreas	Insulin	Controller of sugar metabolism.(2)

The thyroid gland is the controller of the speed of living; it played an important part in making land animals of sea animals; in man it maintains the amount of iodine as in his natural habitat, the sea. Cretinism results from thyroid deficiency, while feeding thyroxin brings about a transformation: a complete remaking of body and mind; it makes a frog from a

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(1) Louis Berman The Glands Regulating Personality p 22.
(2) Same pp 94-5.

tadpole and a person from an impregnated cell. Concerning the pituitary he declares that the complete extirpation of the gland means death, while partial extirpation means degeneration. Sleep and hibernation are results of the temporary dormancy of this gland; overaction in a child means a giant.

While it is understood that the enthusiasts on the subject tend to go to extremes it seem quite clear that the secretions mentioned affect neural functions and hence behavior. At the same time it is evidently the case that many statements concerning the secretions are a-priori probabilities rather than empirically proven facts. Dr. Berman does not have the medical profession solidly behind him in his assertions. The glands work together. When one is singled out and studied it is by no means certain that the observer is not ignoring some vitally important factor. A person's habits are made by his experience, not by his glands, although it is freely admitted that the glands affect his experience. It is possible that the glands are united in a sort of interlocking directorate, the balance of power being held by the strongest. Why is any particular one strongest in a given situation? We can say that original nature made it so or we can say that we do not know, or we can believe in some psychic factor not yet tangible to the observer--perhaps the missing part of Berman's formula for the soul. The operation of the glands varies nerve tension; this is manifested in emotional feeling, but why the gland begins to operate in its particular manner we do not know.

This summary of a study of the facts, foundations, and classifications of temperaments has been made with the end in view of arriving at a decision as to whether or not people can be grouped in any sort of practical and usable manner. As a final aid recourse has been made to a very simple experi~~e~~ment: the listing of the names of a hundred relatives, friends, and acquaintances in all walks of life, with a mental review of the traits, activities, similarities, and differences of each alone and in comparison with others. The whole group fell quite readily into two main divisions: Jung's labels, extravert and introvert seem to be the more applicable designations; almost as readily the group fell into another classification, dominated by feelings or by intellect. Combining the two groups the following results were obtained:

1.	Extravert-emotional	33
2.	Introvert-emotional	24
3.	Extravert-intellectual	21
4.	Introvert-intellectual	20
5.	Unclassifiable	2
		100

The surprising element of the result was the way in which the groups were so evenly divided. Perhaps life on the earth would be unbearable or even unliveable were not its inhabitants balanced according to some such system. There may be more truth than nonsense in the popular saying: "It takes all kinds to make a world." It would not have been a difficult matter to divide the group according to activity something after the order of Myerson's kinetic types. An attempt was also made to classify the individuals according to some phase of

volitional activity but this did not work out with any degree of satisfaction. The conclusion was finally arrived at that each member of each group was shot through with a degree of volitional activity peculiar to himself. It was feared that the practicality of any classification would decrease as its subdivisions increased, hence the stop was made at four.
The only final stopping place would be reached when each person had found his own particular group, wherein he would be so labeled as to be set apart from all the rest of humanity.
It is helpful to remember here that convergence is more common and more important for the progress of the race than digression. If individuals did not have a greater number of similarities than they have differences, the science of psychology would be impossible; schools, colleges, and all group teachings and activities would be out of the question.

Temperament is not merely a characteristic of an individual; it would be more in accord with the truth to say that it is the individual. Each man is different, not because his gross structure is so unlike that of his fellows, but because of other and more elusive factors. This problem of individual differences is the one which makes classification so difficult. Recent thought has had a decided materialistic bias; the tendency has been to reduce everything to that which can be appreciated by the senses, but this view is untenable for long because it is so incomplete and limited to say nothing of its being scientifically dishonest since it ignores facts that are only explained away by some ipse dixit. Luther might have recanted as did Galileo, but he didn't. Why didn't he?

Was it because of his glands, or because of some power that he had that enabled him to dictate to his glands? Why ignore that which we cannot isolate and name? From the primary colors an artist can mix shades and tones by the thousands. The normal individual has the primary colors and the power to mix blends and combinations that set him off from his fellow-men; the social forces about him help, of course, with the mixing process since they furnish the stimulus for the organic habits which become a part of temperament. The vigor of physiological function and psychological tone will partly explain the process. Thorndike lists three causes of individual differences: (1) Original nature: sex, ancestry, and environment, (2) Extent to which original tendencies have been matured by mere inner growth, and (3) circumstances of life and training.(1)

It can be demonstrated without difficulty that types generically the same can be changed by emphasis upon the intellectual or emotional phases. One of Jastrow's SENSITIVE-active people might be melancholic under an intellectual emphasis or aesthetic under an emotional emphasis. The rule is, however, that each individual has a temperamental set. Furthermore, Valentine makes the assertion that as personality develops one becomes less and less susceptible to the irrelevant factors in a situation and so moves toward a wider constancy within the scope of any temperamental trait.(2) The reason for this is, no doubt, that habits are organized in systems and attention is controlled by narrowing interests. He adds

(1) Quoted by Valentine in Psychology of Personality p 64.
(2) P. F. Valentine " " " p 21-22.

also that the efficiency of metabolism, and disposition of bodily by-products are important factors to be considered since a smooth running mechanism fosters a bright hedonic tone. Miss Hazlitt agrees substantially with this; in her book on Ability she brings out the fact that however one uses his original endowment it will lead to the development of special abilities. Capacity is general, according to her conception, while abilities are special.(1)

Most individuals have a characteristic level of emotion, thinking, willing, etc., particularly the first. In each emotional level there appear three dimensions: (1) frequency and change, (2) breadth, and (3) strength. It is here that we find a basis for that which is called religious experience, a phase of psychology which is in itself a special and interesting field of investigation. (The balance of the chapter will be devoted to this subject, because religion provides an admirable opportunity for the study of temperament in an objective way, and because religion is one of the great dominating forces of life.) Man does not have a religious nature as such; the various interests which he pursues: business, art, sciemce, politics, religion, all and each occupy the whole man. To a normal man some sort of religious outlook is essential; some sort of philosophy of life is necessary if he would rise above the brute plane of existence. It is strange that so many psychologists pride themselves upon ignoring this; while boasting of their

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(1) Victoria Hazlitt Ability p 74.

empirical honesty they refuse to recognize some of the outstanding facts of human experience.

Conscious direction of the organism seems to be just as evident a fact as the physiological foundation for mind. If conscious direction is possible, then temperament is modifiable. Nature can be modified by nurture, and the process begins at birth.(1) "The personal environment is therefore a very powerful factor in the education of children. The habitual emotional attitudes of the people who surround a little child leave their impress upon him before he is three years old."(2) This simply means that his temperamental bias has received a 'set' at this early stage in his experience, and this 'set' is traceable to forces outside himself.

Some. no doubt, are better equipped than others for special forms of the religious experience, but who will say that the experience of the mystic is of finer quality than the experience of the man driven to philanthropic activity and social service by the sheer love of his fellow-men? There is room for each type and fortunate is the man who works for and attains a balance within himself; he can do this and yet retain his temperamental set: be predominantly an extravert or an introvert and yet enough of both to appreciate the viewpoint of another individual. Let us assert once more the fact that pure types do not exist among normal people. William James was not dealing with normal people when he said that religious geniuses show symptoms of nervous instability,

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(1) There is some reason to believe that the process sometimes if not always antedates birth.

(2) F. L. Strickland Determining Temperament
Zion's Herald Feb. 1, 1928.

and that the pathological features of their experience give power and authority to them.(1) An experiment conducted by Professor Coe at Northwestern University some years ago is of interest here. A group of students were divided into several smaller groups, one of which was composed of those who expected some sort of radical transformation as an indication or accompaniment of their religious experience. Some of the group received that which they expected, and others did not. All were classified as to their predominant characteristic: intellect, sensibility, or will, with the following result:(2)

	Sensibility predominant	Intellect predominant	Will predominant
17 who expected transformation and received it.	12	2	3
12 who expected transformation and did not receive (it.	2	9	1

This is by no means conclusive evidence but it is an indication that those who live by the senses are more likely to get that sort of experience than those whose lives are ruled by intellect. This does not prove that the sense-dominant people have more aptitude for religious experience than the intellect or will-dominant type. Each class will merely tend to get a different type of experience.

Applying the system of classification which we have chosen as usable and practical(3) to religious experience we would get some such result as the following.

(1) Wm. James Varieties of Religious Experience p 25.
(2) Geo. A. Coe The Spiritual Life pp 109-120.
(3) See Page 101.

Extravert-emotional:--the type frequently encountered in campmeetings where the 'old-fashioned' gospel is emphasized. The standard of Christian experience is the manifestation of the power of the spirit, such as gifts of tongues, physical exertions, etc. In a far western state, a few years ago, the writer was acquainted with a preacher who was an excellent example of this type. He was a large man (260 pounds), had an imposing appearance , personal magnetism, and was almost worshipped by a company of 400 people whom he had gathered about him. It would usually take him about fiftenn minutes to get his congregation to the place where he could make them laugh, cry, shout, or groan, whichever might be his desire(he would say the 'leading of the spirit'). He accomplished this by certain peculiar modulations of voice accompanied by a rhythmic swaying of his great body, and rapidly changing facial expressions. He could feel the pulse of his crowd and knew what would bring response at a particular point in the service. The sermons were appeals to the emotions and their effectiveness was judged by the feeling aroused. The same conditions prevailed in the weekly prayer-meeting and the frequent revival services. An emotional experience was regarded as real, or rather no experience was considered complete until the seeker had found liberty to jump, shout, or exhort.

Introvert-emotional:--the type that is subject to deep feeling, noticeable only to the observing; such may even shun the noise of the group just portrayed, have visions, dream dreams, have revelations direct from God, and possibly be afflicted by spiritual pride, or an excess of humility.

In the same church there was an example of this type, a Mr. B-------. He was an elderly gentleman who preferred religious services where anyone with a 'message' might have opportunity of delivering it. He was never noisy, yet was regarded with great veneration since he had trances where he saw things which sounded very profound and significant with the telling of them. Scripture verses for him always had some deep meaning, he would expound them for an hour without his hearers being able to understand a thing. Instead of regarding him as visionary and incoherent their respect for him was usually increased. These strange experiences would come to him when he was alone, hence it was not just for show. He was, of course, an extreme case. The late Bishop Quayle of the Methodist Church might be cited as an example of the highest type of this class, although some might argue with good reason that he should be classified with the introvert-intellectual group.

Extravert-intellectual:--the organizers and builders. They may decry the emotional element to the extent of reducing religion too much to a business proposition. Bishops, college presidents, and men of affairs are frequently good examples of this group.

Introvert-intellectual:--the theologi~~/~~ans and philosophers. Great preachers and intelligent mystics will be found in this group; some may have a tendency to become too ritualistic. In the church we have mentioned there was a certain young man who was repeatedly urged to come forward for prayers;

conscientiously he went and became the center of a great hubbub as the faithful gathered around to "pray him through." Time and again he went through this same performance trying hard to obey all instructions but becoming more and more confused all the time. One day he packed a knapsack, went off into the mountains for three days, then returned with the look of a man who had settled some baffling problem. Out in the quietude of nature he literally 'figured it out' for himself. He typifies this group, and has since become an inspirational preacher of considerable power.

SUMMARY

1. Temperament may be considered as the foundation upon which character may be built.

2. Temperament has a strong physical and hereditary basis.

3. There is in it also a psychic element that cannot be ignored.

4. Classifications must not be taken too seriously. There are no pure types among normal persons. People cannot be labeled and penned in stockyard fashion.

5. Yet we can in a general way group people according to their predominant characteristics.

6. The extrovert-introvert and emotional-intellectual divisions seem to be fairly usable and practical.

7. It might be possible to use the volitional element as a grouping principle, but it seems better to make it subordinate, that is, use it within each of the groups mentioned in #6.

8. Temperament can be modified by conscious direction and by education. This begins at an early stage in the career of the individual--possibly in the pre-natal period.

9. There are no specific temperaments, such as the 'religious'. The whole man is involved in each activity of life. Certain temperamental forms tend toward certain kinds of religious experience. The different religious denominations may find the explanation of their existence in this fact of psychology.

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